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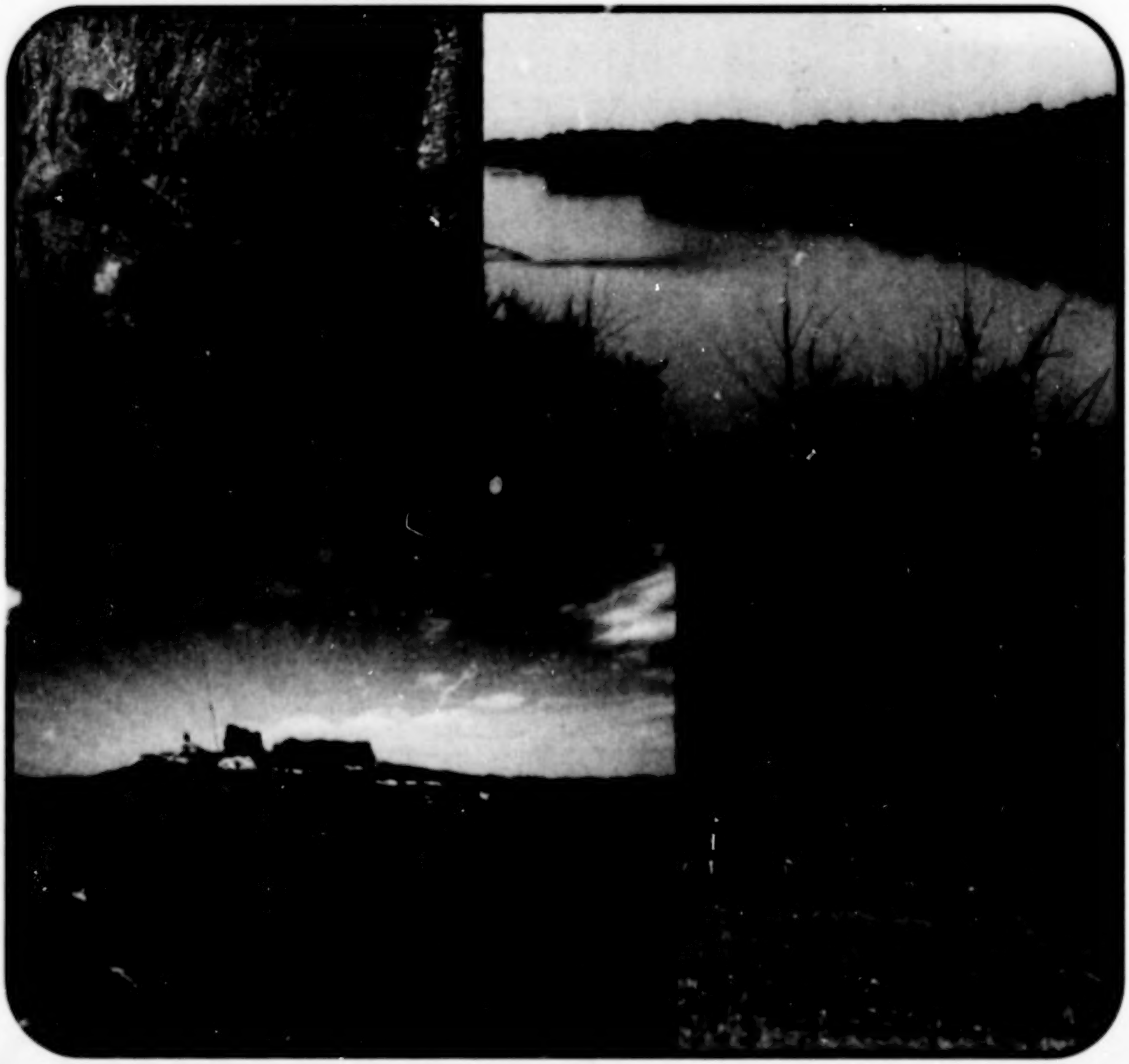
United States Department of the Interior
Bureau of Land Management

Billings Field Office
Miles City Field Office
South Dakota Field Office

August 1998

AREAS OF CRITICAL ENVIRONMENTAL CONCERN

Environmental Assessment and Proposed Amendment of the Billings, Powder River and South Dakota Resource Management Plans



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The Bureau of Land Management is responsible for the stewardship of our public lands. It is committed to manage, protect, and improve these lands in a manner to serve the needs of the American people for all times. Management is based on the principles of multiple use and sustained yield of our nation's resources within a framework of environmental responsibility and scientific technology. These resources include recreation; rangelands; timber; minerals; watershed; fish and wildlife; wilderness; air; and scenic, scientific, and cultural values.

BLM/MT/PL-98/013+1150

Cover, clockwise from top left: Rock art at Weatherman Draw; Howrey Island; wild horses at East Pryor Mountains; and Finger Buttes.

I

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Miles City Field Office
111 Garryowen Road
Miles City, Montana 59301

August 24, 1998

Dear Reader:

Enclosed is the environmental assessment and proposed resource management plan amendment for proposed areas of critical environmental concern (ACECs) within the Miles City, Billings, and South Dakota field offices. This document analyzes the environmental impacts from implementing the proposed plan (Alternative C) and two other alternatives. It incorporates comments and suggestions made on the environmental assessment and draft resource management plan amendment from the public review period that began December 1997 and ended March 1998.

The document has been edited to reflect the change in structure for the organizations in Miles City, South Dakota and Billings. The planning area has not changed, but due to the renaming of offices, headings such as "Powder River Resource Area" or "South Dakota Resource Area" are now noted as "Powder River RMP Area" and "South Dakota RMP Area."

Decision changes from the Draft Amendment include analyzing and recommending a 1,520 public surface acre area for the Finger Buttes proposed ACEC and allowing oil and gas leasing in this area with a No Surface Occupancy stipulation; not allowing oil and gas leasing, rights-of-way, or mineral material sales or permits in the proposed Bridger Fossil ACEC; not allowing geophysical exploration on significant cultural resource sites, or wood product permits or sales in the Castle Butte proposed ACEC; not allowing wood product sales or permits in the proposed Stark Site ACEC; and not allowing collection of common invertebrate or plant fossils, oil or gas leasing, or rights-of-way in the proposed Fossil Cycad ACEC. The Crooked Creek Natural Area, located within the proposed East Pryor Mountains ACEC, was evaluated and determined to meet the ACEC criteria for its paleontological values.

The resource management planning process includes an opportunity for review through a plan protest to the BLM's Director. Any person or organization who participated in the planning process and has an interest which is or may be adversely affected by the approval of this resource management plan amendment may protest the plan. Careful adherence to the following guidelines will assist in preparing a protest that will assure the greatest consideration for your point of view.

(1) Only those persons or organizations who participated in the planning process may protest the plan.

(2) A protesting party may raise only those issues which were commented on during the planning process.

(3) Additional issues may be raised at any time and should be directed to the Miles City Field Office for consideration in plan implementation, as potential plan amendments, or as otherwise appropriate.

The protest period lasts 30 days and begins the day the Notice of Availability for this document is published in the Federal Register. There is no provision for an extension of time. Protests filed late, or filed with the State Director or Field Manager shall be rejected by the Director. To be considered "timely" your protest must be sent to the Director of BLM and must be postmarked no later than the last day of the protest period. Although not a requirement, sending your protest by certified mail, return receipt requested, is recommended.

All protests must be filed in writing to:

Director, Bureau of Land Management
Attention: Ms. Brenda Williams, Protests Coordinator
WO-210/LS-1075
Department of the Interior
Washington, D.C. 20240

The Overnight Mail address is:

Director, Bureau of Land Management
Attention: Ms. Brenda Williams, Protests Coordinator
1620 L Street, N.W. Room 1075
Washington, D.C. 20036

To expedite consideration, **in addition to the original sent by mail or overnight mail**, a copy of the protest may be sent by:

FAX to (202) 452-5112; or

Email to bhudgens@wo.blm.gov

In order to be considered complete, your protest must contain, at a minimum, the following information:

1. The name, mailing address, telephone number, and interest of the person filing the protest.

2. A statement of the issue being protested.

3. A statement of the portion of the plan being protested. To the extent possible, this should be done by reference to specific pages, paragraphs, sections, tables, and maps in the proposed resource manage plan amendment.

4. A copy of all documents addressing the issue submitted during the planning process or a reference to the date the issue was discussed for the record.

5. A concise statement explaining why the BLM State Director's decision is believed to be incorrect is a critical part of the protest. Take care to document all relevant facts and to reference or cite the planning documents, environmental analysis documents, and available planning records (meeting minutes, summaries, correspondence). A protest without data will not provide us with the benefit of your information and insight, and the Director's review will be based on the existing analysis and supporting data.

At the end of the 30-day protest period, the BLM may issue a Decision Record, approving implementation of any portion of the proposed plan not under protest. Approval will be withheld on any portion of the plan under protest, until the protest is resolved.

We thank the individuals and organizations who participated in the planning process and look forward to your continued interest in the management of your public land resources.

Sincerely,

Timothy M. Murphy

Timothy M. Murphy
Field Manager

AREAS OF CRITICAL ENVIRONMENTAL CONCERN

ENVIRONMENTAL ASSESSMENT AND PROPOSED AMENDMENT OF THE BILLINGS, POWDER RIVER AND SOUTH DAKOTA RESOURCE MANAGEMENT PLANS

Areas of Critical Environmental Concern
Billings, Miles City and South Dakota Field Offices
Montana and South Dakota

Prepared by
Miles City Field Office
Bureau of Land Management, Montana

EA Number MT-020-98-01

August 1998

IV

FINDING OF NO SIGNIFICANT IMPACT

On the basis of the information contained in the amendments to the Billings, Powder River and South Dakota resource management plans and the attached environmental assessment, we have determined that the proposed alternative (Alternative C) will have no significant impact on the human environment and that preparation of an environmental impact statement is unnecessary.

Sandy Brooks

Sandy Brooks
Field Manager
Billings Field Office

8/18/98
Date

Todd S. Christensen

Todd Christensen
Assistant Field Manager - Resources
Miles City Field Office

8/18/98
Date

Tom Steger

Tom Steger
Field Manager
South Dakota Field Office

8/18/98
Date

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ABBREVIATIONS AND ACRONYMS

ACEC	Area of Critical Environmental Concern
Bbl	Barrel of Oil
BLM	Bureau of Land Management
EA	Environmental Assessment
EIS	Environmental Impact Statement
MCF	Thousand Cubic Feet of Gas
RMP	Resource Management Plan
U.S.	United States
USDI	United States Department of the Interior
USFWS	Unites States Fish and Wildlife Service
USGS	United States Geological Survey
VRM	Visual Resource Management

CHAPTER 1
PURPOSE AND NEED

INTRODUCTION

This environmental assessment (EA) analyzes areas that meet the Area of Critical Environmental Concern (ACEC) criteria and require special management within the South Dakota and Billings field offices, and the Powder River RMP area of the Miles City Field Office. The document will amend the South Dakota, Powder River and Billings resource management plans (RMPs).

ACEC designations highlight areas where special management attention is needed to protect and prevent irreparable damage to:

important historic, cultural and scenic values;

fish, wildlife resources or other natural systems or processes;

or to protect human life and safety from natural hazards.

The Bureau of Land Management (BLM) recognizes that the ACEC has significant values and establishes special management measures to protect those values. The designation is a reminder that significant values exist which must be accommodated when future management actions and land use proposals are considered within the ACEC. Designation may also support a funding priority.

This document is in conformance with 43 CFR part 1610.7-2 "Designation of Areas of Critical Environmental Concern."

NEED FOR THE PROPOSED ACTION

Members of the public nominated the Fossil Cycad, Finger Buttes, Deadhorse Badlands, Pryor Mountains, Pompeys Pillar, and Red Dome/Bridger Fossil areas for ACEC designation in the Final Oil and Gas Environmental Impact Statement (EIS) (BLM, 1992). That EIS also analyzed ACEC designation for Weatherman Draw and Meeteetse Spires. In 1995, BLM requested nominations from the public through a Notice of Intent to Plan in the *Federal Register*. BLM is mandated by section 202(c)(3) of the Federal Land Policy and Management Act of 1976 to give priority to the designation and protection of ACECs in the development and revision of land use plans.

CONFORMANCE WITH THE LAND USE PLAN

The Billings RMP was approved through a Record of Decision issued September 28, 1984. Four alternatives, including the preferred, were considered. Special management areas, such as Weatherman Draw, were mentioned specifically in the document, but ACEC designations were not included.

The Powder River RMP was approved through a Record of Decision issued March 15, 1985. Five alternatives, including the preferred were analyzed. No ACECs were identified in the RMP. Language in the Record of Decision states: "...If such (ACEC) areas are identified in the future and their resource values cannot be protected through other management techniques, ACEC designation may be made." The South Dakota RMP was approved through a Record of Decision issued April 14, 1986. Five alternatives, including the preferred were analyzed in the RMP. No ACECs were identified. The Record of Decision states: "...If such (ACEC) areas are identified in the future, ACEC designation must be made."

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CHAPTER 2
ALTERNATIVES

INTRODUCTION

This chapter presents alternatives consistent with BLM policy. These alternatives represent combinations of actions to guide land use and resource management of areas proposed for ACEC designation. The basic goal of each alternative is to resolve issues within each potential ACEC area.

During plan development, the current situation was analyzed, public demand was assessed, and the capability of the BLM to resolve the issues was evaluated. This analysis was the basis for formulating alternatives. Each alternative represents a different approach for resolving the issues.

Acreages are approximated and refer to BLM-administered surface and mineral estate only.

ALTERNATIVES CONSIDERED AND DROPPED FROM FURTHER ANALYSIS

A potential ACEC for cultural, wildlife, scenic, vegetation and geologic values, comprising approximately 80,000 public surface acres was considered but not analyzed in detail (see map 1). This proposed ACEC was reduced to 29,500 public surface acres because the entire 80,000 acres did not meet both the relevance and importance criteria for ACEC designation. Information on the evaluation is found in appendix 1 under "Billings RMP Area", "The Pryor Mountains Area."

A potential ACEC for paleontology and scenic values comprising approximately 3,500 public surface acres was considered but not analyzed in detail (see map 8). The Bridger Fossil/Red Dome area was evaluated for relevance and importance for ACEC designation. This nominated ACEC was reduced to 575 public surface acres because the entire 3,500 acre area did not meet the relevance and importance criteria. Information on the evaluation is found in appendix 1 under "Billings RMP Area," "Red Dome" and "Bridger Fossil Area".

A potential area of critical environmental concern, Finger Buttes, comprising 6,206 public surface acres was considered and dropped from further analysis. This proposed ACEC was reduced to 1,520 public surface acres. Letters from the public indicated that the entire 6,206 acre area did not contain the same scenic values (see comments under "Powder River RMP Area" in Chapter 5). A field trip to the area was conducted by BLM May 13, 1998. The recommendation was made to designate a 1,520 acre area for ACEC. The area BLM recommends is dominated by pinnacles and columns that are widely dispersed in the remaining 4,686 acre area. Also, having 9,033 acres of intermingled private surface, without support from local landowners, would have made management for scenic values difficult.

Allowing oil and gas leasing in the Weatherman Draw, Meeteetse Spires, East Pryor Mountains, and Fossil Cycad area was previously analyzed in detail. Impacts from oil and gas leasing may be found in Appendix E of the Final Oil and Gas EIS (BLM, 1992) for Weatherman Draw and Meeteetse Spires (Alternative A). Chapter 4 of that document discusses impacts to paleontology resources (Fossil Cycad area). The Billings Resource Area RMP and Final EIS (BLM, 1983) discusses impacts to the Pryor Mountain Wild Horse Range (East Pryor Mountains) in Chapter 4 under the "Low Level Management" alternative.

The wilderness study areas in the Powder River and Billings RMP areas were considered but not analyzed in detail. The resource values in these areas are currently under protection in accordance with BLM's 1995 Interim Management Policy for Lands Under Wilderness Review.

Three of the four wilderness study areas in the Billings RMP area overlap the East Pryor Mountains nomination. The East Pryor Mountains nomination is analyzed in detail below.

ALTERNATIVES ANALYZED IN DETAIL

The following areas are analyzed in detail.

Billings RMP Area
- Bridger Fossil
- Castle Butte
- Meeteetse Spires
- Petroglyph Canyon
- East Pryor Mountains
- Stark Site
- Weatherman Draw

Powder River RMP Area
Battle Butte
Finger Buttes
Howrey Island
Reynolds Battlefield
South Dakota RMP Area
Fossil Cycad

Management Common To All Alternatives applies to every alternative, and is no change from existing management. Management actions found in Management Common To All Alternatives are part of the BLM's preferred alternative.

Three alternatives are analyzed in detail for each potential ACEC. Alternative A, the no action alternative, would continue present management. If adopted, there would be no amendment to the RMPs or designation of any ACECs. Alternative B would provide protection for the relevant and important values and for renewable resource values. Alternative C, the preferred alternative, would designate ACECs and restrict uses that conflict with the value(s) that warrant protection. **All management actions that restrict or exclude use are subject to valid existing rights.**

ACEC designation is considered on areas where BLM administers the surface estate. Lands with other surface ownerships may appear in the document because of proposed federal mineral prescriptions, but these lands are not part of the area BLM proposes for ACEC designation. BLM will pursue acquisition with willing sellers of adjacent lands if the acquired lands would enhance the values or afford better protection of the ACEC.

In areas proposed "closed" to oil and gas leasing, if oil and gas were being drained from these lands, the regulations at 43 CFR 3100.0-3(d), the Secretary's general authority to prevent the waste and dissipation of public property (43 U.S.C. 1457(12) (1982), and the Attorney General's opinion of April 2, 1941 (Vol 40 Op. Atty. Gen 41) would allow BLM to lease these lands that are otherwise unavailable for leasing.

Lands in these areas would be leased only if a state or fee well was completed within the same spacing unit. These lands would be leased with a no surface occupancy and a no subsurface occupancy stipulation with no waiver, exception, or modification provisions. There would only be a paper transaction with no physical access to the BLM lease or impacts to the area.

There would be no BLM-administered development (drilling or production) within the proposed ACEC area. After issuance of a lease, the lease would be committed to a communitization agreement and the U.S. would then receive revenue in proportion to its acreage interest as it bears to the entire acreage interest commited to the agreement.

BILLINGS RMP AREA

BRIDGER FOSSIL AREA

MANAGEMENT COMMON TO ALL ALTERNATIVES

Air quality would be Class II. The area would be retained in public ownership. Livestock grazing would be allowed (575 public surface acres). Visual resource management (VRM) would be Class IV.

MANAGEMENT ACTIONS SPECIFIC TO EACH ALTERNATIVE

Alternative A

The area would not be designated an ACEC. Rights-of-way would be allowed (575 public surface acres). Mineral material sales and permits, and geophysical exploration for oil and gas would be allowed (575 public mineral acres). Oil and gas leasing would not be allowed on 455 public mineral acres (discretionary closure). The area would be open to oil and gas leasing with a No Surface Occupancy on the paleontology sites and open with lease terms outside the sites in the remaining 120 acre area. The area would be open to off-road vehicle use. Noncommercial collection of common invertebrate and plant fossils would be allowed.

Alternative B

The area would be designated an ACEC (575 public surface acres, see map 2). Rights-of-way and geophysical exploration for oil and gas would not be allowed. Mineral material sales and permits, and oil and gas leasing would not be allowed (575 public mineral acres, discretionary closure). The area would be closed to off-road vehicle use. Noncommercial collection of common invertebrate and plant fossils would not be allowed.

Alternative C (Preferred)

The area would be designated an ACEC (575 public surface acres, see map 2). Rights-of-ways and mineral material sales and permits would not be allowed. Oil and gas leasing would not be allowed (575 public mineral acres, discretionary closure). Underground explosives for geophysical exploration for oil and gas would not be allowed. Other geophysical exploration methods for oil and gas would be allowed if the method would not damage the paleontology resource. If monitoring indicates fossil damage as a result of a geophysical activity, it would no longer be allowed. Off-road vehicle use would be limited to designated roads and trails. Noncommercial collection of common invertebrate and plant fossils would be allowed.

CASTLE BUTTE

MANAGEMENT COMMON TO ALL ALTERNATIVES

Air quality would be Class II. The area would be retained in public ownership (185 public surface acres). Livestock grazing and range improvements would be allowed. VRM would be Class III.

MANAGEMENT ACTIONS SPECIFIC TO EACH ALTERNATIVE

Alternative A

The area would not be designated an ACEC. Fire would be managed with intensive fire suppression. Wood product sales, rights-of-way and geophysical exploration for oil and gas would be allowed. The area would be open to off-road vehicle use.

Alternative B

Castle Butte would be designated an ACEC (185 public surface acres, see map 2). Fire would be managed with conditional fire suppression. Wood product sales, rights-of-way and geophysical exploration for oil and gas would not be allowed. The area would be closed to off-road vehicle use.

Alternative C (Preferred)

Castle Butte would be designated an ACEC (185 public surface acres, see map 2). Fire would be managed with conditional fire suppression. Wood product sales would not be allowed. Geophysical exploration for oil and gas would not be allowed on the significant cultural resource sites. Geophysical exploration would be allowed (surface methods and vibroseis) in the remainder of the area. Rights-of-way would be allowed when they avoid the significant cultural resource sites. Off-road vehicle use would be limited to designated roads and trails.

EAST PRYOR MOUNTAINS

MANAGEMENT COMMON TO ALL ALTERNATIVES

Air quality would be Class II. The area would be managed with conditional fire suppression. Wood product sales would not be allowed. The area would be retained in public ownership (29,500 public surface acres). Rights-of-way and livestock grazing would not be allowed. Geophysical exploration for oil and gas would not be allowed. Off-road vehicle use would be limited to the designated vehicle ways. VRM would be Class II.

MANAGEMENT ACTIONS SPECIFIC TO EACH ALTERNATIVE

Alternative A

The East Pryor Mountains would not be designated an ACEC. Locatable mineral entry would be allowed (28,500 public mineral acres). Mineral material sales and permits, and oil and gas leasing would not be allowed (20,488 public mineral acres nondiscretionary, and 8,012 public mineral acres discretionary closures). Noncommercial collection of common invertebrate and plant fossils would be allowed.

Alternative B

The East Pryor Mountains would be designated an ACEC (29,500 public surface acres, see map 1). Locatable minerals would be withdrawn from entry (28,500 public mineral acres, discretionary closure). Mineral material sales and permits, and oil and gas leasing would not be allowed (28,500 public mineral acres, discretionary closure). Noncommercial collection of common invertebrate and plant fossils would not be allowed.

Alternative C (Preferred)

The area would be designated an ACEC (29,500 public surface acres, see map 1). Locatable minerals would be withdrawn from entry (28,500 public mineral acres, discretionary closure). Mineral material sales and permits, and oil and gas leasing would not be allowed (28,500 public mineral acres, discretionary closures). Noncommercial collection of common invertebrate and plant fossils would be allowed.

MEETEETSE SPIRES

MANAGEMENT COMMON TO ALL ALTERNATIVES

Air quality would be Class II. The area would be retained in public ownership (960 public surface acres). An easement across state land (T. 8 S., R. 20 E., Section 36) would be obtained. The area would be closed to oil and gas leasing (960 public mineral acres, discretionary closure). VRM would be Class II.

MANAGEMENT ACTIONS SPECIFIC TO EACH ALTERNATIVE

Alternative A

The area would not be designated an ACEC. Fire would be managed with intensive fire suppression. Timber harvest would be allowed. Wood product sales would not be allowed. Rights-of-way would be allowed (960 public surface acres). Livestock grazing, except for sheep, would be allowed. Locatable mineral entry and mineral material sales and permits would be allowed (960 public mineral acres). Geophysical exploration for oil and gas would be accessed by air only. Exploration would be shot holes and above ground shots. Vibroseis would not be allowed. The area would be open to off-road vehicle use, except south of North Fork Grove Creek. In that area, off-road vehicle use would be limited to designated roads and trails during hunting season (September through November).

Alternative B

Meeteetse Spires would be designated an ACEC (960 public surface acres, see map 3). Fire would be managed with conditional fire suppression. Timber harvest, wood product sales and rights-of-way would not be allowed. Livestock grazing would not be allowed. This would require .5 miles of fence. Locatable minerals would be withdrawn from entry (discretionary closure). Mineral material sales and permits would not be allowed (960 public mineral acres, discretionary closure). Geophysical exploration for oil and gas, all methods, would not be allowed. The area would be closed to off-road vehicle use.

Alternative C (Preferred)

Meeteetse Spires would be designated an ACEC (960 public surface acres, see map 3). Fire would be managed with conditional fire suppression. Selected timber harvests may be periodically necessary to protect the area's overall resource value. Wood product sales would not be allowed. Livestock grazing, except for sheep, would be allowed. Rights-of-way would not be allowed. Mineral material sales and permits would not be allowed (960 public mineral acres, discretionary closure). Locatable minerals would be withdrawn from entry (960 public mineral acres, discretionary closure).

In the sensitive plant area, geophysical exploration for oil and gas would not be allowed by any method. On the remaining area, geophysical exploration would be accessed by air only. Exploration would be shot holes and aboveground shots. Vibroseis would not be allowed. Off-road vehicle use would be limited to designated roads and trails, yearlong, in the entire area.

PETROGLYPH CANYON

MANAGEMENT COMMON TO ALL ALTERNATIVES

Air quality would be Class II. The area would be retained in public ownership (240 public surface acres). Rights-of-way would be excluded. Livestock grazing and range improvements would be allowed. Locatable minerals would be withdrawn from entry (240 public mineral acres, discretionary closure) and VRM would be Class IV.

MANAGEMENT ACTIONS SPECIFIC TO EACH ALTERNATIVE

Alternative A

The area would not be designated an ACEC. Wood product sales would be allowed (240 public surface acres). Oil and gas leasing would be allowed with a No Surface Occupancy stipulation (240 public mineral acres). The area would be closed to geophysical exploration for oil and gas. Off-road vehicle use would be limited to designated roads an trails.

Alternative B

Petroglyph Canyon would be designated an ACEC (240 public surface acres, see map 2). Wood product sales would not be allowed. Oil and gas leasing and geophysical exploration for oil and gas would not be allowed (240 public mineral acres, discretionary closure). The area would be closed to off-road vehicle use.

Alternative C (Preferred)

The area would be designated an ACEC (240 public surface acres, see map 2) and managed the same as those actions prescribed under Alternative B.

STARK SITE

MANAGEMENT COMMON TO ALL ALTERNATIVES

Air quality would be Class II. The area would be retained in public ownership (800 public surface acres). Livestock grazing and range improvements would be allowed. VRM would be Class III.

MANAGEMENT ACTIONS SPECIFIC TO EACH ALTERNATIVE

Alternative A

The area would not be designated an ACEC. Fire would be managed with intensive fire suppression. Wood product sales and rights-of-way would be allowed (800 public surface acres). Mineral material sales and permits would be allowed (240 public mineral acres). Oil and gas leasing would be allowed with a No Surface Occupancy stipulation (240 public mineral acres). Geophysical exploration for oil and gas would be allowed. The area would be open to off-road vehicle use.

Alternative B

The area would be designated an ACEC (800 public surface acres, see map 2). Fire would be managed with conditional fire suppression. Wood product sales and rights-of-way would not be allowed. Mineral material sales and permits would not be allowed (240 public mineral acres, discretionary closure). The area would be closed to oil and gas leasing (240 public mineral acres, discretionary closure). The area would be closed to geophysical exploration for oil and gas. The area would be closed to off-road vehicle use.

Alternative C (Preferred)

The Stark Site would be designated an ACEC (800 public surface acres, see map 2). Fire would be managed with conditional fire suppression. Wood product sales would not be allowed. Rights-of-way would not be allowed. Mineral material sales and permits would not be allowed (240 public mineral acres, discretionary closure). Oil and gas leasing would be allowed with a No Surface Occupancy stipulation (240 public mineral acres, see Appendix 3). Geophysical exploration for oil and gas would not be allowed on the significant cultural resource sites and would be allowed (surface methods and vibroseis) in the remainder of the proposed ACEC. Off-road vehicle use would be limited to designated roads and trails.

WEATHERMAN DRAW

MANAGEMENT COMMON TO ALL ALTERNATIVES

Air quality would be Class II. The area would be retained in public ownership (4,268 public surface acres). Livestock grazing would be allowed.

MANAGEMENT ACTIONS SPECIFIC TO EACH ALTERNATIVE

Alternative A

Weatherman Draw would not be designated an ACEC. The area would be managed with intensive fire suppression. Wood product sales and rights-of-way would be allowed (4,268 public surface acres). Locatable mineral entry would be withdrawn on 600 public mineral acres (discretionary closure) and allowed on the remaining 3,668 acres. Geophysical exploration for oil and gas on those 600 acres would be allowed with the following stipulation: an archaeologist must be present and no blading would be allowed to access the area. The remaining 3,668 acres would be open to geophysical exploration for oil and gas. Range improvements would be allowed. Mineral material sales and permits would be allowed. The area would be closed to oil and gas leasing (discretionary closure, 4,268 public mineral acres). The area would be open to off-road vehicle use. VRM would be Class III.

Alternative B

Weatherman Draw would be designated an ACEC (4,268 public surface acres, see map 2). The area would be managed with conditional fire suppression. Wood product sales, rights-of-way and range improvements would not be allowed. Locatable minerals would be withdrawn from entry (discretionary closure, 4,268 public mineral acres). Mineral material sales and permits would not be allowed (4,268 public mineral acres, discretionary closure). The area would be closed to oil and gas leasing (4,268 public mineral acres, discretionary closure). Geophysical exploration for oil and gas and off-road vehicle use would not be allowed. VRM would be Class II.

Alternative C (Preferred)

The area would be designated an ACEC (4,268 public surface acres, see map 2). Fire would be managed with conditional fire suppression. Wood product sales would not be allowed. Rights-of-way associated with valid existing oil or gas lease rights would be allowed with restrictions. Other rights-of-way would not be allowed. Range improvements would be allowed when they do not conflict with the ACEC values. Locatable minerals would be withdrawn from entry (discretionary closure, 4,268 public mineral acres). Mineral material sales and permits would not be allowed (4,268 public mineral acres, discretionary closure). Oil and gas leasing would be allowed with a No Surface Occupancy stipulation with no waiver, exception or modification provisions (4,268 public mineral acres, see Appendix 3). The area would be closed to geophysical exploration for oil and gas. Off-road vehicle use would be limited to authorized use. VRM would be Class II.

POWDER RIVER RMP AREA

BATTLE BUTTE

MANAGEMENT COMMON TO ALL ALTERNATIVES

Air quality would be Class II. The area would be retained in public ownership (120 public surface acres). VRM would be Class III.

MANAGEMENT ACTIONS SPECIFIC TO EACH ALTERNATIVE

Alternative A

The area would not be designated an ACEC. Fire would be managed with intensive fire suppression. Rights-of-way would be allowed (120 public surface acres). Livestock grazing and range improvements would be allowed. Coal leasing would be allowed (120 public mineral acres). Mineral material sales and permits would be allowed (120 public mineral acres). Oil and gas leasing would be allowed with a No Surface Occupancy stipulation (120 public mineral acres). Geophysical exploration for oil and gas would not be allowed. The area would be open to off-road vehicle use.

Alternative B

The area would be designated an ACEC (120 public surface acres, see map 4). Fire would be managed with conditional fire suppression. Rights-of-way would not be allowed. Livestock grazing and range improvements would not be allowed, requiring 1.5 miles of fence. Coal leasing would be allowed. Mineral material sales and permits would not be allowed (120 public mineral acres, discretionary closure). The area would be closed to oil and gas leasing (120 public mineral acres, discretionary closure). Geophysical exploration for oil and gas would not be allowed. The area would be closed to off-road vehicle use.

Alternative C (Preferred)

The area would be designated an ACEC (120 public surface acres, see map 4). Fire would be managed with conditional fire suppression. Rights-of-way would not be allowed. Livestock grazing and range improvements would be allowed. Coal leasing would not be allowed (120 public mineral acres, discretionary closure). Mineral material sales and permits would not be allowed (120 public mineral acres, discretionary closure). Oil and gas leasing would be allowed with a No Surface Occupancy stipulation (120 public mineral acres). Geophysical exploration for oil and gas would be allowed on designated roads and trails with restrictions. Off-road vehicle use would be limited to designated roads and trails. Vehicle travel off designated roads and trails would be allowed only for authorized or permitted uses. These uses include medical or other emergencies and livestock management practices.

FINGER BUTTES

MANAGEMENT COMMON TO ALL ALTERNATIVES

Air quality would be Class II. The area would be retained in public ownership (1,520 public surface acres). VRM would be Class II.

MANAGEMENT ACTIONS SPECIFIC TO EACH ALTERNATIVE

Alternative A

The area would not be designated an ACEC. Fire would be managed with intensive fire suppression. Rights-of-way, livestock grazing and range improvements would be allowed (1,520 public surface acres). Mineral material sales and permits would be allowed. Nonenergy leasable mineral leasing would be allowed. The area would be closed to oil and gas leasing (1,520 public mineral acres, discretionary closure). Geophysical exploration for oil and gas would be allowed. The area would be open to off-road vehicle use.

Alternative B

The area would be designated an ACEC (1,520 public surface acres, see map 5). Fire would be managed with conditional fire suppression. Livestock grazing and range improvements would not be allowed. This would require 10 miles of fence. Rights-of-way would not be allowed. Mineral material sales and permits and nonenergy leasable mineral leasing would not be allowed (1,520 public mineral acres, discretionary closure). The area would be closed to oil and gas leasing (1,520 public mineral acres, discretionary closure). Geophysical exploration for oil and gas would not be allowed. The area would be closed to off-road vehicle use.

Alternative C (Preferred)

The area would be designated an ACEC (1,520 public surface acres, see map 5). Fire would be managed with conditional fire suppression. Rights-of-way would avoid the area. Livestock grazing and range improvements would be allowed. Mineral material sales and permits and nonenergy leasable mineral leasing would not be allowed (1,520 public mineral acres, discretionary closure). Oil and gas leasing would be allowed with a No Surface Occupancy stipulation (1,520 public mineral acres, see Appendix 3). Geophysical exploration for oil and gas would be allowed on designated roads and trails with restrictions. Off-road vehicle use would be limited to designated roads and trails. Vehicle travel off designated roads and trails would be allowed only for authorized or permitted uses. These uses include medical or other emergencies and livestock management practices.

HOWREY ISLAND

MANAGEMENT COMMON TO ALL ALTERNATIVES

Air quality would be Class II. The area would be retained in public ownership (321 public surface acres). VRM would be Class II.

MANAGEMENT ACTIONS SPECIFIC TO EACH ALTERNATIVE

Alternative A

The area would not be designated an ACEC. Fire would be managed with intensive fire suppression. Wood product sales, rights-of-way, livestock grazing and range improvements would be allowed (321 public surface acres). Off-road vehicle use would be limited to the existing roads and trails except from February 15 to June 1. During that time, no vehicles would be allowed, including on the existing roads and trails.

Alternative B

The area would be designated an ACEC (321 public surface acres, see map 6). Fire would be managed with conditional fire suppression. Wood product sales, rights-of-way, livestock grazing and range improvements would not be allowed. The BLM road and the adjacent area would be closed to off-road vehicle use.

Alternative C (Preferred)

Howrey Island would be designated an ACEC (321 public surface acres, see map 6). Fire would be managed with conditional fire suppression. Wood product sales would be allowed with restrictions. Rights-of-way would not be allowed. Livestock grazing would be allowed. Improvements for range, wildlife and recreation would be allowed to facilitate resource management. Mitigating measures would be used to ensure improvement projects do not degrade the values of the ACEC. Off-road vehicle use would be limited to the BLM road, except from February 15 to June 1. During that time, no vehicles would be allowed, including on the BLM road, in order to keep motorized vehicles off of ice jams and protect eagle nesting habitat. When flooding creates potentially hazardous driving conditions, the BLM road would be closed until the hazard is mitigated. Timing of maintenance would be dependent on the budget and priorities for the district.

REYNOLDS BATTLEFIELD

MANAGEMENT COMMON TO ALL ALTERNATIVES

Air quality would be Class II. The area would be retained in public ownership (336 public surface acres). VRM would be Class II.

MANAGEMENT ACTIONS SPECIFIC TO EACH ALTERNATIVE

Alternative A

The area would not be designated an ACEC. Fire would be managed with intensive fire suppression. Timber sales, wood product sales, rights-of-way, livestock grazing and range improvements would be allowed (336 public surface acres). Coal leasing and mineral material sales and permits would be allowed (336 public mineral acres). Oil and gas leasing would be allowed with a No Surface Occupancy stipulation (336 public mineral acres). Geophysical exploration for oil and gas would not be allowed. The area would be open to off-road vehicle use.

Alternative B

Reynolds Battlefield would be designated an ACEC (336 public surface acres, see map 4). Fire would be managed with conditional fire suppression. Rights-of-way, wood product sales and timber sales would not be allowed. Livestock grazing and range improvements would not be allowed. This would require four miles of fence.

Coal leasing would be allowed. Mineral material sales and permits would not be allowed (336 public mineral acres, discretionary closure). The area would be closed to oil and gas leasing (336 public mineral acres, discretionary closure). Geophysical exploration for oil and gas would not be allowed. The area would be closed to off-road vehicle use.

Alternative C (Preferred)

Reynolds Battlefield would be designated an ACEC (336 public surface acres, see map 4). Fire would be managed with conditional fire suppression. Wood product sales and timber sales would be allowed with restrictions, such as timber sales would not be allowed east of the county road. Rights-of-way would avoid the area. Livestock grazing and range improvements would be allowed. Coal leasing and mineral material sales and permits would not be allowed (336 public mineral acres, discretionary closure). Oil and gas leasing would be allowed with a No Surface Occupancy stipulation (336 public mineral acres, see Appendix 3). Geophysical exploration for oil and gas would be allowed on designated roads and trails with restrictions. Off-road vehicle use would be limited to designated roads and trails. Vehicle travel off designated roads and trails would be allowed only for authorized or permitted uses. These uses include medical or other emergencies and livestock management practices.

SOUTH DAKOTA RMP AREA

FOSSIL CYCAD AREA

MANAGEMENT COMMON TO ALL ALTERNATIVES

Air quality would be Class II. The area would be closed to oil and gas leasing (320 public mineral acres, discretionary closure). VRM would be Class IV.

MANAGEMENT ACTIONS SPECIFIC TO EACH ALTERNATIVE

Alternative A

The Fossil Cycad area would not be designated an ACEC. The public surface and minerals would not be retained in public ownership. While in federal ownership, the area would be managed with intensive fire suppression. Timber sales and wood product sales, rights-of-way, and livestock grazing would be allowed (320 public surface acres). Locatable mineral entry would be allowed (320 public mineral acres). Geophysical exploration for oil and gas would be allowed. The area would be open to off-road vehicle use. Noncommercial collection of common invertebrate and plant fossils would be allowed.

Alternative B

The Fossil Cycad area would be designated an ACEC (320 public surface acres, see map 7). The area would be managed with conditional fire suppression. Timber sales and wood product sales would not be allowed. The surface and minerals would be retained in public ownership. Rights-of-way would not be allowed. Livestock grazing would not be allowed. This would require 5 miles of fence. Locatable minerals would be withdrawn from entry (320 public mineral acres, discretionary closure). Geophysical exploration for oil and gas would not be allowed. The area would be closed to off-road vehicle use. Noncommercial collection of common invertebrate and plant fossils would not be allowed.

Alternative C (Preferred)

The Fossil Cycad area would be designated an ACEC (320 public surface acres, see map 7). The area would be managed with conditional fire suppression. Timber sales and wood product sales would not be allowed. The surface and minerals would be retained in public ownership. Rights-of-way would not be allowed. Livestock grazing would be allowed. Locatable minerals would be withdrawn from entry (320 public mineral acres, discretionary closure). Geophysical exploration for oil and gas would not be allowed. Off-road vehicle use would be limited to designated roads and trails. Vehicle travel off designated roads and trails would be allowed only for authorized or permitted uses, such as medical or other emergencies and livestock management practices. Noncommercial collection of common invertebrate and plant fossils would not be allowed.

COMPARISON OF ALTERNATIVES

Table 1 compares management actions by RMP area. For additional management actions, see "Management Common to All Alternatives" sections in this chapter.

TABLE 1
COMPARISON OF ALTERNATIVES

	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C (PREFERRED)
THEME	**This alternative would continue existing management practices and would result in no amendment to the land use plans.**	**This alternative would provide the maximum protection for relevant and important values and renewable resource values.**	**This alternative would restrict uses that conflict with the values that warrant protection.**
BILLINGS RMP AREA			
Bridger Fossil Area (575 public surface and mineral acres).	Would not be designated an ACEC.	Would be designated an ACEC.	Same as Alternative B.
	Rights-of-way would be allowed.	Rights-of-way would not be allowed.	Same as Alternative B.
	Mineral material sales and permits would be allowed.	Mineral material sales and permits would not be allowed (discretionary closure).	Same as Alternative B.
	Oil and gas leasing would not be allowed on 455 acres (discretionary closure); and stipulated No Surface Occupancy on paleontology sites, and open with lease terms outside the paleontology sites on 120 acres.	The area would be closed to oil and gas leasing (575 acres, discretionary closure).	Same as Alternative B.
	Geophysical exploration for oil and gas would be allowed.	Geophysical exploration for oil and gas would not be allowed.	Underground explosives would not be allowed. Other geophysical exploration methods for oil and gas would be allowed if the process would not damage the paleontology resource.
	The area would be open to off-road vehicle use.	The area would be closed to off-road vehicle use.	Off-road vehicle use would be limited to designated roads and trails.
	Noncommercial collection of common invertebrate and plant fossils would be allowed.	Noncommercial collection of common invertebrate and plant fossils would not be allowed.	Same as Alternative A.

TABLE 1 (continued)
COMPARISON OF ALTERNATIVES

	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C (PREFERRED)
Castle Butte (185 public surface and no public mineral acres).	Would not be designated an ACEC.	Would be designated an ACEC.	Same as Alternative B.
	Fire would be managed with intensive fire suppression.	Fire would be managed with conditional fire suppression.	Same as Alternative B.
	Wood product sales would be allowed.	Wood product sales would not be allowed.	Same as Alternative B.
	Rights-of-way would be allowed.	Rights-of-way would not be allowed.	Rights-of-way that avoid significant cultural resource sites would be allowed.
	Geophysical exploration for oil and gas would be allowed.	The area would be closed to geophysical exploration for oil and gas.	Geophysical exploration for oil and gas would not be allowed on the significant cultural resource sites. Geophysical exploration would be allowed (surface methods and vibroseis) in the remainder of the area.
	The area would be open to off-road vehicle use.	The area would be closed to off-road vehicle use.	Off-road vehicle use would be limited to designated roads and trails.
East Pryor Mountains (29,500 public surface and 28,500 public mineral acres).	Would not be designated an ACEC.	Would be designated an ACEC.	Same as Alternative B.
	Mineral material sales and permits would not be allowed (8,012 acres discretionary, 20,488 nondiscretionary closures).	Mineral material sales and permits would not be allowed (28,500 acres, discretionary closure).	Same as Alternative B.
	Oil and gas leasing would not be allowed (8,012 acres discretionary, 20,488 acres nondiscretionary closures).	Oil and gas leasing would not be allowed (28,500 acres, discretionary closure).	Same as Alternative B.
	Locatable mineral entry would be allowed.	Locatable minerals would be withdrawn from entry (discretionary closure).	Same as Alternative B.
	Noncommercial collection of common invertebrate and plant fossils would be allowed.	Noncommercial collection of common invertebrate and plant fossils would not be allowed.	Same as Alternative A.

TABLE 1 (continued)
COMPARISON OF ALTERNATIVES

	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C (PREFERRED)
Meeteetse Spires (960 public surface and mineral acres).	Would not be designated an ACEC.	Would be designated an ACEC.	Same as Alternative B.
	Fire would be managed with intensive fire suppression.	Fire would be managed with conditional fire suppression.	Same as Alternative B.
	Timber harvest would be allowed. Wood product sales would not be allowed.	Timber harvest and wood product sales would not be allowed.	Selected timber harvests would be allowed. Wood product sales would not be allowed.
	Rights-of-way would be allowed.	Rights-of-way would not be allowed.	Same as Alternative B.
	Livestock grazing, except for sheep, would be allowed.	Livestock grazing would not be allowed. Need .5 miles of fence.	Same as Alternative A.
	Locatable mineral entry would be allowed.	Locatable minerals would be withdrawn from entry (discretionary closure).	Same as Alternative B.
	Mineral material sales and permits would be allowed.	Mineral material sales and permits would not be allowed (discretionary closure).	Same as Alternative B.
	Geophysical exploration for oil and gas would be accessed by air only. Exploration would be shot holes and above ground shots (vibroseis would not be allowed).	Geophysical exploration for oil and gas, all methods, would not be allowed.	Same as Alternative A, except within the sensitive plant area. In the sensitive plant area, geophysical exploration would not be allowed by any method.
	The area would be open to off-road vehicle use except south of North Fork Grove Creek. In that area, off-road vehicle use would be limited to designated roads and trails during hunting season (September through November).	The area would be closed to off- road vehicle use.	Off-road vehicle use would be limited to designated roads and trails, yearlong, in the entire area.

TABLE 1 (continued)
COMPARISON OF ALTERNATIVES

	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C (PREFERRED)
Petroglyph Canyon (240 public surface and mineral acres).	Would not be designated an ACEC.	Would be designated an ACEC.	Same as Alternative B.
	Wood product sales would be allowed.	Wood product sales would not be allowed.	Same as Alternative B.
	Oil and gas leasing would be allowed with a No Surface Occupancy stipulation. The area would be closed to geophysical exploration for oil and gas.	Oil and gas leasing and geophysical exploration for oil and gas would not be allowed (discretionary closure).	Same as Alternative B.
	Off-road vehicle use would be limited to designated roads and trails.	The area would be closed to off-road vehicle use.	Same as Alternative B.
Stark Site (800 public surface acres, 240 public mineral acres, 80 coal only public mineral acres).	Would not be designated an ACEC.	Would be designated an ACEC.	Same as Alternative B.
	Fire would be managed with intensive fire suppression.	Fire would be managed with conditional fire suppression.	Same as Alternative B.
	Wood product sales would be allowed.	Wood product sales would not be allowed.	Same as Alternative B.
	Rights-of-way would be allowed.	Rights-of-way would not be allowed.	Same as Alternative B.
	Mineral material sales and permits would be allowed.	Mineral material sales and permits would not be allowed (discretionary closure).	Same as Alternative B.
	Oil and gas leasing would be allowed with a No Surface Occupancy stipulation.	The area would be closed to oil and gas leasing (discretionary closure).	Same as Alternative A.
	Geophysical exploration for oil and gas would be allowed.	The area would be closed to geophysical exploration for oil and gas.	Geophysical exploration for oil and gas would not be allowed on the significant cultural resources sites. Geophysical exploration would be allowed (surface methods and vibroseis) in the remainder of the area.
	The area would be open to off-road vehicle use.	The area would be closed to off-road vehicle use.	Off-road vehicle use would be limited to designated roads and trails.

TABLE 1 (continued)
COMPARISON OF ALTERNATIVES

	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C (PREFERRED)
Weatherman Draw (4,268 public surface and mineral acres).	Would not be designated an ACEC.	Would be designated an ACEC.	Same as Alternative B.
	The area would be managed with intensive fire suppression.	The area would be managed with conditional fire suppression.	Same as Alternative B.
	Wood product sales would be allowed.	Wood product sales would not be allowed.	Same as Alternative B.
	Rights-of-way would be allowed.	Rights-of-way would not be allowed.	Rights-of-way associated with valid existing oil and gas lease rights would be allowed with restrictions. Other rights-of-way would not be allowed.
	Range improvements would be allowed.	Range improvements would not be allowed.	Range improvements would be allowed when they do not conflict with the ACEC values.
	Locatable minerals would be withdrawn from entry (600 acres, nondiscretionary closure). On the remaining 3,668 acres, locatable mineral entry would be allowed.	Locatable minerals would be withdrawn from entry (4,268 acres, discretionary closure).	Same as Alternative B.
	Mineral material permits and sales would be allowed.	Mineral material sales and permits would not be allowed (4,268 acres, discretionary closure).	Same as Alternative B.
	The area would be closed to oil and gas leasing (4,268 acres, discretionary closure).	Same as Alternative A.	Oil and gas leasing would be allowed with a No Surface Occupancy stipulation on 4,268 acres.
	Geophysical exploration for oil and gas on 600 acres would be allowed with the following stipulation: an archaeologist must be present and no blading would be allowed to access the area. The remaining 3,668 acres would be open to geophysical exploration.	The area would be closed to geophysical exploration for oil and gas.	Same as Alternative B.

TABLE 1 (continued)
COMPARISON OF ALTERNATIVES

	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C (PREFERRED)
	The area would be open to off-road vehicle use.	The area would be closed to off-road vehicle use.	Off-road vehicle use would be limited to authorized use.
	VRM would be Class III.	VRM would be Class II.	Same as Alterative B.
POWDER RIVER RMP AREA			
Battle Butte (120 public surface and mineral acres).	Would not be designated an ACEC.	Would be designated an ACEC.	Same as Alternative B.
	Fire would be managed with intensive fire suppression.	Fire would be managed with conditional fire suppression.	Same as Alternative B.
	Rights-of-way would be allowed.	Rights-of-way would not be allowed.	Same as Alternative B.
	Livestock grazing and range improvements would be allowed.	Livestock grazing and range improvements would not be allowed. Need 1.5 miles of fence.	Same as Alternative A.
	Coal leasing would be allowed.	Same as Alternative A.	Coal leasing would not be allowed (discretionary closure).
	Mineral material sales and permits would be allowed.	Mineral material sales and permits would not be allowed (discretionary closure).	Same as Alternative B.
	Oil and gas leasing would be allowed with a No Surface Occupancy stipulation.	The area would be closed to oil and gas leasing (discretionary closure).	Same as Alternative A.
	Geophysical exploration for oil and gas would not be allowed.	Same as Alternative A.	Geophysical exploration for oil and gas would be allowed on designated roads and trails with restrictions.
	The area would be open to off-road vehicle use.	The area would be closed to off-road vehicle use.	Off-road vehicle use would be limited to the designated roads and trails.

TABLE 1 (continued)
COMPARISON OF ALTERNATIVES

	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C (PREFERRED)
Finger Buttes (1,520 public surface and mineral acres).	Would not be designated an ACEC.	Would be designated an ACEC.	Same as Alternative B.
	Fire would be managed with intensive fire suppression.	Fire would be managed with conditional fire suppression.	Same as Alternative B.
	Rights-of way would be allowed.	Rights-of-way would not be allowed.	Rights-of-way would avoid the area.
	Livestock grazing and range improvements would be allowed.	No livestock grazing or range improvements would be allowed. Need 10 miles of fence.	Same as Alternative A.
	Mineral material sales and permits would be allowed.	Mineral material sales and permits would not be allowed (discretionary closure).	Same as Alternative B.
	Nonenergy leasable mineral leasing would be allowed.	Nonenergy leasable mineral leasing would not be allowed (discretionary closure).	Same as Alternative B.
	The area would be closed to oil and gas leasing (discretionary closure).	Same as Alternative A.	Oil and gas leasing would be allowed with a No Surface Occupancy stipulation.
	Geophysical exploration for oil and gas would be allowed.	Geophysical exploration for oil and gas would not be allowed.	Geophysical exploration for oil and gas would be allowed on designated roads and trails with restrictions.
	The area would be open to off-road vehicle use.	The area would be closed to off-road vehicle use.	Off-road vehicle use would be limited to designated roads and trails.
Howrey Island (321 public surface and no public mineral acres).	Would not be designated an ACEC.	Would be designated an ACEC.	Same as Alternative B.
	Fire would be managed with intensive fire suppression.	Fire would be managed with conditional fire suppression.	Same as Alternative B.
	Wood product sales would be allowed.	Wood product sales would not be allowed.	Wood product sales would be allowed with restrictions.
	Rights-of-way would be allowed.	Rights-of-way would not be allowed.	Same as Alternative B.

TABLE 1 (continued)
COMPARISON OF ALTERNATIVES

	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C (PREFERRED)
	Livestock grazing and range improvements would be allowed.	Livestock grazing and range improvements would not be allowed.	Livestock grazing would be allowed. Range improvements would be allowed when they do not degrade the values of the ACEC.
	Off-road vehicle use would be limited to existing roads and trails, except from February 15 to June 1. During that time, no vehicles would be allowed, including on the existing roads and trails.	The BLM road and adjacent area would be closed to off-road vehicle use.	Off-road vehicle use would be limited to the BLM road except from February 15 to June 1. During that time, no vehicles would be allowed, including on the BLM road.
Reynolds Battlefield (336 public surface and mineral acres).	Would not be designated an ACEC.	Would be designated an ACEC.	Same as Alternative B.
	Fire would be managed with intensive fire suppression.	Fire would be managed with conditional fire suppression.	Same as Alternative B.
	Timber sales and wood product sales would be allowed.	Timber sales and wood product sales would not be allowed.	Timber sales and wood product sales would be allowed with restrictions.
	Rights-of-way would be allowed.	Rights-of-way would not be allowed.	Rights-of-way would avoid the area.
	Livestock grazing and range improvements would be allowed.	Livestock grazing would not be allowed. Range improvements would not be allowed. Need 4 miles of fence.	Same as Alternative A.
	Coal leasing would be allowed.	Same as Alternative A.	Coal leasing would not be allowed (discretionary closure).
	Mineral material sales and permits would be allowed.	Mineral material sales and permits would not be allowed (discretionary closure).	Same as Alternative B.
	Oil and gas leasing would be allowed with a No Surface Occupancy stipulation.	The area would be closed to oil and gas leasing (discretionary closure).	Same as Alternative A.

TABLE 1 (continued)
COMPARISON OF ALTERNATIVES

	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C (PREFERRED)
	Geophysical exploration for oil and gas would not be allowed.	Same as Alternative A.	Geophysical exploration for oil and gas would be allowed on designated roads and trails with restrictions.
	The area would be open to off-road vehicle use.	The area would be closed to off-road vehicle use.	Off-road vehicle use would be limited to designated roads and trails.
SOUTH DAKOTA RMP AREA			
Fossil Cycad Area (320 public surface and mineral acres.)	Would not be designated as an ACEC.	Would be designated an ACEC.	Same as Alternative B.
	Fire would be managed with intensive fire suppression.	Fire would be managed with conditional fire suppression.	Same as Alternative B.
	Timber sales and wood product sales would be allowed.	Timber sales and wood product sales would not be allowed.	Same as Alternative B.
	The public surface and minerals would not be retained in public ownership.	The surface and minerals would be retained in public ownership.	Same as Alternative B.
	Rights-of-way would be allowed.	Rights-of-way would not be allowed.	Same as Alternative B.
	Livestock grazing would be allowed.	Livestock grazing would not be allowed. Need 5 miles of fence.	Same as Alternative A.
	Locatable mineral entry would be allowed.	Locatable minerals would be withdrawn from entry (discretionary closure).	Same as Alternative B.
	Geophysical exploration for oil and gas would be allowed.	Geophysical exploration for oil and gas would not be allowed.	Same as Alternative B.
	The area would be open to off-road vehicle use.	The area would be closed to off-road vehicle use.	Off-road vehicle use would be limited to designated roads and trails.
	Noncommercial collection of common invertebrate and plant fossils would be allowed.	Noncommercial collection of common invertebrate and plant fossils would not be allowed.	Same as Alternative B.

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CHAPTER 3
AFFECTED ENVIRONMENT

INTRODUCTION

This chapter contains a description of the natural resource, economic and social conditions found in the planning area. The chapter is organized by RMP area, then alphabetically by potential ACEC. General information on each of the RMP areas may be found in their resource management plans (BLM, 1983, 1984a, 1985).

BILLINGS RMP AREA

BRIDGER FOSSIL AREA

The Bridger Fossil area (575 BLM-administered surface and mineral acres) is located in Carbon County, Montana. The area consists of three separate tracts, one with public access. The Bridger Fossil National Natural Landmark is located in this area.

Bridger Fossil area includes the fossil remains of *Deinonychus antirrhopus*, a highly predaceous carnivorous dinosaur from the Cretaceous Cloverly Formation. Interpretation of the anatomy and habits of this creature led to ideas about the warm-bloodedness of dinosaurs, and possible close relationship to modern birds. A recently discovered bone bed in the Jurassic Morrison Formation contains the remains of numerous juvenile and subadult sauropods. This significant concentration of fossil animals is currently being investigated by the Museum of the Rockies, Montana State University. Continued investigations of the find over the next several years is anticipated. The area is used extensively for collection of invertebrate fossils and as an outdoor classroom for the education of local elementary school children. For more information, see appendix 1, under Billings RMP Area, "Bridger Fossil Area."

Soils are commonly shallow and moderately deep with clay loam and silt loam textures and areas of rock outcrop on steeper slopes. Locatable minerals include bentonite. There are no mining claims on any of the tracts; although mining claims are nearby.

Though not leased, the area has moderate development potential for oil and gas. The nearest oil and gas field is Golden Dome located eight miles west.

One livestock operator is permitted 78 animal unit months. The Bridger Fossil area is a mix of shortgrass prairie, sagebrush, grassland badlands, limber pine and juniper habitat. Vegetation is mid seral and includes western wheatgrass, bluebunch wheatgrass, blue grama, needleandthread, sedges and forbs. Big game includes mule deer and there are numerous nongame species. Two black-tailed prairie dog towns are located within one mile of the area.

CASTLE BUTTE

Castle Butte (185 BLM-administered surface acres) is located in Yellowstone County, Montana. There are no BLM- administered minerals at Castle Butte.

The butte is composed of relatively soft, friable, bedded sandstones of the upper Cretaceous Hell Creek Formation. Paleontology resources, such as vertebrate fossils and leaf fossils are found in the area.

All of the art panels are actively weathering to some degree, and in several instances, elements in the panels can no longer be seen. Some panels are threatened by large blocks that periodically drop from the face of the cliffs as erosion of the butte progresses. Castle Butte is a remarkable topographic feature with access from an adjacent county road, and is locally well known.

With the aim of documenting the remaining art in 1991, the University of North Dakota conducted an intensive inventory which located 160 panels, the majority historic graffiti. A long-term investigation of conservation techniques is being conducted by the University of Kansas.

A right-of-way for a county road dissects the area. Mineral materials are sand, gravel, and moss rock. The closest oil or gas activity is located approximately 20 miles east. Pompeys Pillar, the nearest community, is approximately 17 miles south.

One livestock operator is permitted nine animal unit months. Vegetation is early seral to potential natural community and includes bluebunch wheatgrass, western wheatgrass, little bluestem, Indian ricegrass, needleandthread, winterfat, prairie sandreed, forbs, and shrubs. Wildlife habitat is sagebrush, grassland, with ponderosa pine on the ridges and the cliffs. An active golden eagle nest is located on Castle Butte. There are two sage grouse leks within one mile of the area and antelope winter range along the northern boundary. Mule deer are common.

Known to Euro-Americans since the late 19th century, site 24YL418 was nominated to the National Register of Historic Places by BLM in the early 1970s. For more information, see appendix 1, under Billings RMP area, "Castle Butte."

EAST PRYOR MOUNTAINS

This area contains the Pryor Mountain Wild Horse Range; the Burnt Timber Canyon, Pryor Mountain and Big Horn Tack-on wilderness study areas; the Crooked Creek Natural Area and the Crooked Creek National Natural Landmark (NNL). It is approximately 29,500 BLM-administered surface acres and 28,500 BLM-administered mineral acres located in Carbon County, Montana and Big Horn County, Wyoming.

The Crooked Creek paleontology area is located in T. 58 N., R. 95 W. in Bighorn County, Wyoming. This 800 public surface acre area extends beyond the designated Crooked Creek Natural Area and the Crooked Creek National Natural Landmark. It is within the boundaries of the Pryor Mountain Wild Horse Range, and partly within the boundaries of the Pryor Mountain Wilderness Study Area.

In 1966, when the Crooked Creek NNL was designated, the area was known as one of only two localities in North America which had produced early Cretaceous land vertebrates. Important primary finds of early Cretaceous dinosaur specimens were made here by paleontologists from Princeton University in the 1940s, and by workers from Yale University in the 1960s. Fauna first identified at the Crooked Creek NNL include a primitive hadrosaur, a small and a large carnivorous dinosaur, a sauropod, an ankylosaur, and an ornithopod dinosaur. The primitive hadrosaur and the smaller of the two carnivores were recovered as essentially complete skeletons. Paleontological permits have been issued for investigations in the area as recently as the summer of 1997.

The Burnt Timber Canyon, Pryor Mountain and Big Horn Tack-on wilderness study areas were recommended for wilderness designation in the Montana Statewide Wilderness Study Report, Volume II (BLM, 1991). These areas and additional areas recommended as wilderness are located on approximately 20,488 public surface and mineral acres in portions of Montana T. 8 S., and T. 9 S., R. 28 E., T. 9 S., R. 27, and Wyoming T. 58 N., R. 95 W.

The Pryor Mountain Wild Horse Range encompasses the majority of the three wilderness study areas. The wild horse range is located in the southeastern portion of Carbon County, Montana and extends into the northern portion of Big Horn County, Wyoming. The range is bordered on the north and west by the Custer National Forest, on the south by private lands and on the east by the Big Horn Canyon National Recreation Area. The city of Lovell, Wyoming is approximately 13 miles south.

The Pryor Mountain Wild Horse Range was created by order of the Secretary of the Interior on September 9, 1968. It was the first such designation in the United States. Land in Wyoming was added to the Pryor Mountain Wild Horse Range in 1975, and in 1989 there were 1,840 acres of state land acquired by BLM for the public through exchange. Of the latter, 1,342 acres are within the Pryor Mountain Wild Horse Range.

The horse range contains approximately 150 horses as of May 1996 on approximately 38,000 acres of land. Although the range is made up of private and public land (BLM, Forest Service, National Park Service), BLM is responsible for management of the Pryor Mountain Wild Horse Range. The area is administered primarily for the protection and management of wild horses, wildlife, recreation, watershed, archeological and scenic values. The designation directs that management of the wild horses be within a balanced program that considers all public values without impairment to the productivity of the land.

The area has many diverse habitat types and associated species of wildlife coexisting with a herd of wild and free roaming horses. The primary big game species are mule deer, Rocky Mountain bighorn sheep, elk and black bear. Mule deer are the most abundant and the most widely distributed. There is seasonal movement from the subalpine forest and meadow zones in the northern portions of the area to the sagebrush, juniper and mountain mahogany zones along the southern foothills in the fall and winter months. Elk do not use the area on a regular basis. Elk primarily use the forest lands to the west, but they have been observed in the spring and early summer months in the upland meadows, where grass and forb production is high.

Black bear are abundant and are generally found in the north-central portions of the horse range where the topography is very rugged. Heavily timbered side slopes and bottoms provide the necessary hibernating, forage, and cover requirements needed on a yearlong basis. Infrequently, mountain lions are observed along the western periphery used by wild horses. Upland game birds include blue grouse, sage grouse and pheasant. There are also unconfirmed reports of ruffed grouse. Blue grouse primarily occur in the forested areas and associated meadows. Sage grouse are found in the southern and eastern portions of the area where sagebrush and grassland are the dominant vegetation. Pheasants occur in the southernmost portion near cultivated fields. None of these species are considered abundant.

The only threatened or endangered wildlife species identified is the peregrine falcon. BLM surveys conducted in 1979 and 1980 revealed no current use. From 1989 through 1994, 28 peregrine falcons were released from Bighorn Canyon National Recreation Area adjacent to the Pryor Mountain Wild Horse Range near Layout Creek. An active peregrine falcon eyrie on the Bighorn Canyon National Recreation Area has fledged five young since 1994. There have been several peregrine falcon sightings near Crooked Creek and Layout Creek since 1994. Two peregrine falcons were sighted on Sykes Ridge in 1996 (Lindsey, 1996).

Numerous reptiles, nongame mammals and birds occur in the East Pryor Mountains. Use by nongame birds appears to be heaviest during spring and summer months. A small white-tailed prairie dog town is documented in the southeast.

Three species of bats occur in horse range. Table 2 lists the species and their rankings by the Montana Natural Heritage Program.

Crooked Creek is the only active fishery in the area supporting species of brook, rainbow, and cutthroat trout. Yellowstone cutthroat trout may be isolated in the upper portions, representing a pure genetic strain with a high intrinsic value. Yellowstone cutthroat trout, a State Sensitive Species, are classified S2 by the Montana Natural Heritage Program.

The National Park Service has conducted a complete vertebrate inventory of lands under their jurisdiction. The study area includes the horse range. The mammal and bird portion of this inventory was completed in 1984. The reptile, amphibian and fish portion was completed in 1985.

Vegetation is early seral to potential natural community. There are three distinct vegetation zones, with associated ecoclines separating them. At the lowest elevations, the cold desert shrub community is dominated by Utah juniper, big sagebrush, shadscale, rubber rabbitbrush, bluebunch wheatgrass, alkali sacaton, blue grama, cheatgrass brome and needleandthread. At low to mid elevations the vegetation type changes to predominately black sagebrush and mountain mahogany with some Utah juniper. Grasses in this cline include bluebunch wheatgrass, needleandthread grass, sun sedge and blue grama.

At mid elevations the community type changes again. On open wind swept ridges, black sage and bluebunch wheatgrass dominate with some Utah juniper and limber pine, while Douglas fir stands dominate the coulee slopes. At mid to upper elevations, the Douglas fir forest begins to dominate the landscape. Associated species include limber pine and an occasional Utah juniper. Grasses under the forest canopy are sparse but include pine grass, Idaho fescue, some sedge and limited forbs. The Douglas fir forest gives way to a cline that is predominately open limber pine stands and open parks with big sagebrush, bluebunch wheatgrass, and sedge.

The third distinct vegetation type is found at the uppermost elevations and is made up of a mosaic of Engleman spruce, sub-alpine fir forest and open alpine-like meadows. Grasses in these meadows include Idaho fescue, timber oatgrass, Canby bluegrass and thickspike wheatgrass. Forbs and wild flowers are also abundant and include western yarrow, lupine cinquefoil and prince's plume.

There is a low potential for oil and gas development in the East Pryor Mountains. There are no existing oil or gas

TABLE 2
SPECIAL STATUS SPECIES

Scientific Name	Common Name	USFWS Status	Rareness Code Global/State
Townsends's Big-Eared Bat	Plecotus townsendi	—	G4/S2
Pallid Bat	Antrozous pallidus	—	G5/S1
Spotted Bat	Euderma maculatum	C2	G4/S1

C2 means it is a candidate for the U.S. Fish and Wildlife Service listing as threatened and endangered, but more information is needed to list or delist.

S1 means critically imperiled in the state of Montana because of extreme rarity (5 or fewer occurrences, or very few remaining individuals), or because of some factor of its biology making it especially vulnerable to extinction from the state.

S2 means imperiled in the state of Montana because of rarity (6 to 20 occurrences), or because of other factors demonstrably making it very vulnerable to extinction throughout its range in Montana.

G4 means The Nature Conservancy feels an animal is apparently globally secure. Globally secure, by The Nature Conservancy's definition, means there is no danger of the species becoming extinct in the world, but it is sensitive in Montana.

G5 means The Nature Conservancy considers the species demonstrably secure.

leases. The nearest exploration hole lies nearly four miles to the west and the nearest oil and gas field is located approximately 15 miles west in Wyoming.

There are several rights-of-way in the East Pryor Mountains. There are no unpatented mining claims; but evidence does suggest that extensive mining for uranium did occur in the past. A limestone quarry is approximately 15 miles to the west. This same general area has numerous claims and exploration has occurred.

MEETEETSE SPIRES

Meeteetse Spires (960 BLM-administered surface and mineral acres) is located in Carbon County, Montana at the base of the eastern slopes of the Beartooth Mountains, and approximately five miles south of the town of Red Lodge. The Meeteetse Spires are in the rain-shadow of the Beartooth Mountains and exhibit an extremely abrupt change in annual precipitation from nearly 26 inches on the western boundary to six inches in the east (Lesica, 1988). The terrain slopes steeply, dropping from 7,200 feet to 5,600 feet. The spires are formed by a tilted layer of sedimentary rocks at the edge of the Beartooth Uplift and are remnants of upturned Madison limestone.

No mining claims exist at Meeteetse Spires. Mining claims are located on the tops of the limestone escarpments to the west. Mineral materials are sand, gravel, or moss rock.

Meeteetse Spires is not leased for oil and gas. There is a moderate development potential for oil and gas and exploration has occurred within one mile of Meeteetse Spires. A small oil and gas field is located approximately six miles southeast, in Wyoming. Coal bed methane exploration has been conducted to the northeast, less than two miles from the area.

Meeteetse Spires is in the vicinity of recreational areas near Red Lodge. Hikers, climbers, and sightseers use the area during the spring and summer (Lesica, 1988). In the fall, hunters use Meeteetse Spires intensively.

Soils are primarily stony and calcareous. At higher elevations, soils are thin and poorly developed. The outwash slope soils are stony loams.

Meeteetse Spires was dedicated as a Centennial Preserve on October 7, 1989, through the efforts of The Nature Conservancy and the BLM. The preserve was created to protect the spectacular scenery and natural beauty of the spires and the ecological habitat for two rare plant species. The area is drained by nearly a dozen perennial and intermittent streams which flow eastward from the mountain front to form the Grove Creek and Wolf Creek drainages.

Variations in moisture have affected soil development which determines the plant communities in the area. *Shoshonea pulvinata* and *Townsendia spathulata*, occur at the higher elevations. A rare plant species, *Shoshonea pulvinata* is known in only 3 locations in Montana and fewer than 12 locations globally (Lesica, 1988). It is a candidate for listing as a federal endangered species. *Townsendia* was considered rare in Montana, but the 1993 Pryors Botanical Study conducted by the Montana Natural Heritage Program indicated that *Townsendia* was widely distributed throughout the Pryor Mountains and did not warrant sensitive listing. It is also found in two western Montana counties (Beaverhead and Broadwater) and in Wyoming.

At lower elevations plant communities are limber pine and Douglas fir; limber pine and Rocky Mountain juniper; montane riparian forest; and Douglas fir forests (Lesica, 1988).

The vegetation is late seral to potential natural community. Vegetation occurring on drier sites consist of Douglas fir, limber pine, big sagebrush, western snowberry, bluebunch wheatgrass, needleandthread, Indian ricegrass, upland sedges and forbs. In both the south and north forks of Grove Creek, narrowleaf cottonwood, Engleman spruce, quaking aspen, peachleaf willow, red-osier dogwood, Kentucky bluegrass, rushes, sedges and various forbs occur.

Elk calving and mule deer fawning occur at the north end of Meeteetse Spires. Elk winter range is scattered across the area. Peregrine falcons, an endangered species, are located in the area. Prairie falcons, red-tailed hawks, and ravens are common near the spires.

PETROGLYPH CANYON

Petroglyph Canyon (240 BLM-administered surface and mineral acres) is located in southern Carbon County, Montana. Known by Smithsonian trinomial number 24CB601, Petroglyph Canyon is a Late Prehistoric rock art site listed on the National Register of Historic Places. The site consists of 38 panels of petroglyphs. Human figures dominate the artwork. Materials recovered in excavations at the base of the panels include chipped stone tools, flaking debris and charcoal. Radiocarbon dating of the charcoal resulted in the dates AD 1045 to 1260 and AD 565 to 930. For more information on the site, see appendix 1, under Billings RMP area, "Petroglyph Canyon."

There are no rights-of-way at Petroglyph Canyon. Two livestock operators are permitted 3.2 and 1.5 animal unit months. The area provides a supply of dead juniper for local furniture makers.

The area is segregated from appropriation under the agricultural land laws, from sales under Section 2455 of the revised statutes, and from operation of the mining laws. It was withdrawn from mineral entry, but not from mineral leasing March 7, 1988.

Petroglyph Canyon has low potential for oil and gas development. The nearest oil and gas field is approximately five miles to the southwest, in Wyoming. No geophysical activity has occurred in this area for the past 10 years.

Petroglyph Canyon lies in the Cretaceous Cloverly Formation. Soils are commonly shallow to moderately deep with clay loam and silt loam textures and areas of rock outcrop on steep slopes.

Vegetation is early to mid seral and includes western wheatgrass, Indian ricegrass, bluebunch wheatgrass, fourwing saltbush, shadscale, Nuttall's saltbush, Douglas rabbitbrush, phloxes, needleandthread, sedges and forbs. The wildlife habitat is juniper, canyon rim and cliffs, sagebrush, grassland and cold desert shrub. Big game is limited to a few mule deer. There are active golden eagle and great-horned owl nests in the canyon.

STARK SITE

The Stark Site (800 BLM-administered surface acres, 240 BLM-administered mineral acres, and 80 coal only BLM-administered acres) is located in western Musselshell County, Montana. The closest community is Lavina, approximately 17 miles southwest. A county road goes through the eastern edge of the area.

The area is a complex of sites used for bison impoundment and processing, occupations, burials, a rockshelter, rock art, and historic remains. Of the 26 sites recorded, 21 are considered eligible for nomination to the National Register of Historic Places. For more information, see appendix 1, under Billings RMP area, "Stark Site."

Three livestock operators are permitted 54, 19 and 117 animal unit months. Some adjacent areas were farmed but have been reseeded into crested wheatgrass.

Oil and gas development potential is low to moderate. An oil and gas lease exists east of the Stark Site. The nearest oil and gas field is approximately 12 miles east, in the Lake Mason area.

The Stark Site is in the Paleocene Tullock Member of the Fort Union Formation. The surface is sandstone outcrops with terrace deposits. Erosion west and east of the area has produced semi-rough "breaks."

Vegetation includes western wheatgrass, little bluestem, needleandthread, sedges and forbs. Wildlife habitat is sagebrush and grassland, with ponderosa pine on the ridges. There is one sage grouse lek within the area, and two leks within .5 miles. Big game species are mule deer and antelope.

WEATHERMAN DRAW

Weatherman Draw (4,268 BLM-administered surface and mineral acres) is located in Carbon County, Montana. Weatherman Draw contains 40 rock art sites with associated buried deposits. For more information, see appendix 1, under Billings RMP area, "Weatherman Draw" of this document and appendix E in the Final Miles City District Oil and Gas EIS and RMP Amendment (BLM, 1992).

There is no legal access into Weatherman Draw. The area provides a supply of dead juniper for local furniture makers.

Mineral materials are gravel, moss rock or sand. There are no existing mining claims. A four-foot coal seam with gypsum inclusions was developed as a marginal mine, but this mine does not appear to have been worked since World War II.

The area is in the southernmost extension of the Bridger coal beds. There are two oil and gas leases within Weatherman Draw that are in suspension. Four applications for Permit to Drill were submitted on these leases in 1993, but no drilling occurred. In 1987, an exploration well was drilled on public land at the mouth of Weatherman Draw. This well was plugged and abandoned. A large oil and gas field is located approximately eight miles southwest.

Weatherman Draw is in the Cretaceous Eagle Sandstone. Soils are commonly shallow and have sandy to sandy loam textures with moderate amounts of rock fragments. Erosion has produced canyon topography with numerous vertical sandstone exposures.

Vegetation is early to late seral and includes bluebunch wheatgrass, western wheatgrass, needleandthread, prairie sandreed, forbs, and shrubs. Wildlife habitat is limber pine, ponderosa pine, juniper, sagebrush, grassland and rock outcrop. This area has been identified by BLM as an "Important Raptor Nesting/Hunting/Concentration Area." Raptors include red-tailed hawks, golden eagles, prairie falcons, and American kestrels. Big game species are mule deer and antelope. The majority of antelope are found to the south in the more gentle, flat terrain.

POWDER RIVER RMP AREA

BATTLE BUTTE

Battle Butte (120 BLM-administered surface and mineral acres) is located in Rosebud County, Montana. There is an existing fence for .5 miles on the north boundary of the area. Oil and gas development potential is moderate.

The site is 1 of 12 battles fought during the Sioux Indian War. See appendix 1, under Powder River RMP area, "Battle Butte" for more information.

Battle Butte is in the Paleocene Tongue River Member of the Fort Union Formation. Soils have surface textures of loam and silt loam.

Vegetation is potential natural community and includes bluebunch wheatgrass, green needlegrass, western wheatgrass, little bluestem, big sagebrush and forbs. Steeper slopes contain fragments of clinker and often have low density stands of ponderosa pine and juniper.

Wildlife habitat is mainly sagebrush and grass. Small intermittent drainages in the area support a variety of riparian vegetation including green ash and taller shrubs as well as grasses and forbs. Although not a high wildlife use area, mule deer do occur as well as a limited variety of nongame mammals, birds and reptiles.

FINGER BUTTES

Finger Buttes (1,520 BLM-administered surface and mineral acres) is located in Carter County, Montana. There is no legal access into the area. Oil and gas development potential is moderate.

The area is in the Arikaree Formation. Soils are shallow to moderately deep with loam and sandy loam textures.
The Arikaree Formation was deposited approximately 20 million years ago in the Miocene Epoch of the late Tertiary Period. This formation also forms the caps and buttes of the Chalk Buttes, Long Pines and Ekalaka Hills; areas that are administered by the Forest Service. Finger Buttes are the only buttes of this formation administered by BLM in Montana.

The Chalk Buttes and Long Pines are flat-topped and tree covered. Finger Buttes is much more eroded with a linear series of slim, finger-shaped, pipe-stemmed buttes; creating an unusual, unique and interesting geologic formation and landscape. These numerous buttes jut toward the sky and stand out on the horizon.

Vegetation is mid to late seral and includes bluebunch wheatgrass, western wheatgrass, needleandthread, little bluestem, prairie sandreed, big sagebrush, skunkbrush sumac, other shrubs and forbs. Some areas have low density stands of green ash, Rocky Mountain juniper and ponderosa pine. A 1996 inventory located *Haplopappus multicaulis*, or many-stemmed goldenweed, in such quantity that it is no longer on the BLM watch list for sensitive species.

Wildlife habitat consists of low shrubs and grasses on the south slopes. The north slopes support a mixture of scattered trees and taller shrubs combined with forbs and grasses. A few scattered intermittent ponds occur on the north slopes as well as one productive spring. Wildlife species include mule deer, sharp-tailed grouse, and a limited variety of reptiles, nongame mammals and birds. The area is habitat for the golden eagle. A population of feral pigeons occupy Finger Buttes. Their presence has drawn the attention of golden eagles, ferruginous hawks and prairie falcons.

HOWREY ISLAND

Howrey Island (321 BLM-administered surface acres) is located in Treasure County, Montana. The island was acquired by the BLM in 1982. There are no public minerals.

The island is in the floodplain of the Yellowstone River. Accretion and evulsion may cause the property line to vary.

A right-of-way was granted to the Montana Department of Fish, Wildlife and Parks in 1986 for 15 acres. This fenced area is located along Highway 311 and includes a road, picnic, parking, and boat launch area. A BLM road to the east of the right-of-way is accessed via a gate that is locked from February 15 to June 1 for safety reasons and for management of bald eagle nesting habitat.

During periods of low water, motorized vehicles access the island via the BLM road by crossing an oxbow to the east. During and after periods of heavy flooding, the gate is locked for the public's safety as travel on the BLM road could be hazardous.

Howrey Island is on Quaternary gravels consisting of chert, moss agates, quartzite, volcanic pebbles, and other various rock types. Yellow or tan, smooth, well-rounded quartzite pebbles and cobbles are characteristic. Soils are deep and have loam and sandy loam textures.

Vegetation is mid seral and includes western wheatgrass, thickspike wheatgrass, needleandthread, green needlegrass, forbs, and shrubs. Trees, usually cottonwood, green ash and willow, dominate some areas.

The island provides habitat for a number of game species including white-tailed deer, pheasants, turkeys, and waterfowl. This area is nesting and brood rearing habitat for Canada geese and other waterfowl species. A wide variety of reptiles, nongame mammals and birds occur and reproduce in the area. There is an active bald eagle (threatened species) nest on the island. This nest has fledged young birds successfully for a number of years. Howrey Island has been designated a Watchable Wildlife Area by BLM and contains a self-guided nature trail for use by the public.

REYNOLDS BATTLEFIELD

Reynolds Battlefield (336 BLM-administered surface and mineral acres) is located in Powder River County, Montana. Oil and gas development potential is moderate. Approximately 70 acres are leased for oil and gas.

The site is in the Paleocene Tongue River Member of the Fort Union Formation. Soils have surface textures of loam and silt loam.

Vegetation is mid seral and includes bluebunch wheatgrass, green needlegrass, western wheatgrass, little bluestem, forbs, and shrubs. Steeper slopes contain fragments of clinker and often have stands of ponderosa pine and juniper.

The lower elevations contain a variety of riparian species including deciduous trees as well as grasses and forbs. Mule deer and white-tailed deer are common. The area supports a wide variety of reptiles, nongame mammals and birds. Known by Smithsonian trinomial number 24PR89, Reynolds Battlefield is 1 of 12 major battles fought during the Sioux War. See appendix 1, under Powder River RMP area, "Reynolds Battlefield" for more information.

SOUTH DAKOTA RMP AREA

FOSSIL CYCAD AREA

The Fossil Cycad area (320 BLM-administered surface and mineral acres) is located in Fall River County, South Dakota. This area was nominated as a National Monument in 1920 by Executive Order, designated by Congress in 1922 and administered by the National Park Service. In 1957, the Public Land Order designating the Fossil Cycad National Monument was revoked and the land reverted back to BLM administration. Due to vandalism and unauthorized collection of all of the known fossils, it was believed that the paleontological values no longer existed. In 1980, construction within a 300 foot highway right-of-way unearthed additional fossil specimens.

Soils are deep to shallow with stony and loamy textures. Vegetation is upper seral to potential natural community and include western wheatgrass, needleandthread, green needlegrass, wheatgrass, little bluestem and blue grama.

The area's boundary is fenced. There have been three permits for Christmas trees since 1985. Range improvements include one water well and tank. Oil and gas development potential is moderate. Uranium and vanadium are present.

The cycads are a rare fossilized cone-bearing plant species found in the 130 to 135 million year old Mesozoic Era sedimentary deposits. Rapid deposition and type of material resulted in favorable conditions for fossilization. The plant was mostly tropical and a cross in appearance between tree ferns and palms. Cycads are of greater antiquity than the earliest known true flowering plants. See appendix 1, under South Dakota RMP area, "Fossil Cycad Area" for more information.

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CHAPTER 4
ENVIRONMENTAL IMPACTS

INTRODUCTION

This chapter presents the environmental impacts from management actions described in chapter 2. Assumptions used in analyzing the environmental impacts are described for each resource. Assumptions provide common data for team members to use when conducting the environmental analyses. These assumptions are based on previous events, experience of personnel, and their knowledge of the resources in the planning area. The assumptions include the demand for various resources, the ability of the resources to meet the demand and how the actions would be carried out.

This section is outlined alphabetically by RMP area, proposed ACEC and alternative. Under each proposed ACEC, assumptions and impacts from management actions for each alternative are addressed. For the purpose of the analysis, "short-term" impacts are those that would last five years or less; "long-term" impacts would last more than five years.

Economic impacts are summarized under each section and discussed further for each RMP area in appendix 4.

GENERAL ASSUMPTIONS

The BLM will comply with applicable laws, regulations, and policies in the implementation of this plan. The management actions will be carried out if adequate personnel and funding are available.

The population in the Billings area is growing at a rate of 1.5% each year. As the population increases, recreation and visitor use is expected to increase in nearby potential ACECs.

BILLINGS RMP AREA

BRIDGER FOSSIL AREA

ASSUMPTIONS

There are no fuels present for fire. There is no resource potential for forestry, coal, locatable minerals, or nonenergy leasable minerals. One linear right-of-way disturbing 5 acres would be constructed in 20 years. One mineral material permit or sale would disturb 1 acre in 20 years. One oil or gas well in 20 years would disturb 5 acres. One permit for geophysical exploration for oil and gas would disturb .25 acres. Open off-road vehicle use would disturb .25 acres per mile.

IMPACTS FROM MANAGEMENT ACTIONS COMMON TO ALL ALTERNATIVES

By retaining this area in public ownership, BLM could make the cultural and paleontological resources available for scientific study, and provide recreational opportunities in those areas legally accessible.

IMPACTS FROM MANAGEMENT ACTIONS SPECIFIC TO EACH ALTERNATIVE

Alternative A

Activity in the area would increase the potential for vandalism, unauthorized collection or disturbance to cultural and paleontology sites.

During right-of-way construction, erosion would temporarily occur until vegetation was reestablished. There would be a permanent loss of vegetation for livestock and wildlife from a road. Other rights-of-way activities, such as a powerline, would cause a 1 to 2 year loss of vegetation.

There would be a minor and brief increase of suspended solids off the right-of-way construction area. This would have a negligible affect on water quality downstream in the Clark's Fork of the Yellowstone River. Wildlife would be temporarily displaced during construction. If located in the same area, right-of-way construction may prevent one approximately $30 mineral material sale.

By allowing a mineral material permit or sale, fossils located in sandstone could be disturbed or removed.

Allowing oil and gas leasing with lease terms would result in a 5 acre loss of vegetation for the life of the oil or gas well and an additional 1 to 2 year loss until the area was reclaimed. Wildlife such as mule deer and sage grouse would be temporarily displaced during drilling activity, and there would be a five acre loss of wildlife habitat during the life of the well. One animal unit month of livestock forage for one permittee would be lost. Until vegetation was reestablished, soil erosion would temporarily occur.

Closing 455 acres to oil and gas leasing would exclude collection of rents, royalties and bonuses by the Federal Government.

If located in the same area, oil or gas activity may prevent a mineral material sale. There would be an increase of suspended solids off the oil or gas construction area. Dust would occur as a result of oil or gas development. Lease terms to oil and gas development could increase operating costs, relocate wellsites, delay operations, hinder orderly field development, and possibly delay revenues.

During geophysical exploration, wildlife would be temporarily displaced. Vibroseis would temporarily compact soils and there would be a 5 to 10 year loss of sagebrush. Shot holes would create holes underground, potentially damaging the buried paleontology resource.

Open off-road vehicle use would increase the potential for the unauthorized collection of moss rock, impact cultural resource features such as fire hearths, and cause a permanent loss of vegetation on new trails due to soil erosion.

Allowing noncommercial collection of common invertebrate and plant fossils would provide a recreational opportunity. Some significant fossil material could be inadvertently collected. Allowing collection could result in the discovery of new and significant vertebrate fossil localities.

Alternative B

Closing the area to mineral material development and other activities would increase the protection of the paleontology resource. With less activity, the potential for vandalism or the removal of fossils would decrease.

Not allowing a mineral material sale would cause a sale at another location, which may inconvenience the operator.

Closing the area to oil and gas leasing would exclude collection of rents, royalties and bonuses by the Federal Government.

Closing geophysical operations would interfere with complete data acquisition. Lack of or incomplete geophysical data could affect leasing and lease development decisions in adjacent areas. The number of leases sold and the number of wells drilled could be reduced.

Closing off-road vehicle use would lessen erosion in the area, benefiting cultural resources, vegetation for livestock and wildlife, and water quality. There would be less opportunity for that type of recreational use for the public, and a potential loss of 20 user days.

Not allowing the noncommercial collection of common invertebrate and plant fossils would be an inconvenience to those recreation enthusiasts who would have to go elsewhere. The Cloverly formation has limited plant and vertebrate fossils (available only in localized pockets) and not allowing their collection would help protect the area from vandalism. Not allowing noncommercial collection may result in the loss of opportunities for new discoveries of vertebrate fossils.

Alternative C (Preferred)

Closing the area to mineral material development and other activities would increase the protection of the paleontology resource. With less activity, the potential for vandalism or the removal of fossils would decrease.

Not allowing a mineral material sale would cause a sale at another location, which may inconvenience the operator.

Closing the area to oil and gas leasing would exclude collection of rents, royalties and bonuses by the Federal Government.

Allowing geophysical exploration for oil and gas would provide for the acquisition of geophysical data to make leasing and lease development decisions.

Limiting off-road vehicle use would lessen erosion in the area, benefiting cultural resources, vegetation for livestock and wildlife, and water quality. There would be less opportunity for that type of recreational use for the public, and a potential loss of 20 user days.

Allowing noncommercial collection of common invertebrate and plant fossils would provide a recreational opportunity. Some significant fossil material could be inadvertently collected. Allowing collection could result in the discovery of new and significant vertebrate fossil localities.

CASTLE BUTTE

ASSUMPTIONS

There would be 1 prescribed fire and 1 wildfire in 20 years, each disturbing 100 acres. Impacts from a wildfire would be more severe than those from a prescribed fire. Prescribed fire would be conducted under controlled conditions, such as greater soil moisture, to reduce impacts to vegetation and soils. There is no commercial timber present for a timber sale. One wood product sale in 20 years for salvage firewood would disturb 20 acres. One linear right-of-way in 20 years would disturb 5 acres. One acre would be disturbed in 20 years for geophysical operations.

IMPACTS FROM MANAGEMENT ACTIONS COMMON TO ALL ALTERNATIVES

By retaining this area in public ownership, BLM could make the cultural resources available for scientific study.

Allowing livestock grazing in this allotment would reduce wildlife cover and increase soil erosion.

IMPACTS FROM MANAGEMENT ACTIONS SPECIFIC TO EACH ALTERNATIVE

Alternative A

Activity in the area would increase the potential for vandalism, unauthorized collection and disturbance to cultural sites.

Intensive fire suppression could impact cultural resource sites from blading during fire-line construction. Depending on the intensity of the wildfire, vegetation would become a lower seral stage for the short-term and soil erosion would occur until vegetation was reestablished. Wildlife habitat would be removed and there would be a short-term displacement of wildlife. Wildlife using sagebrush for cover and forage would decline or be displaced over the long-term. Burned areas would be a visual impact, but esthetics would recover after one year.

One permit for salvage firewood would have an economic benefit of $50.

During right-of-way construction, there would be a temporary loss of vegetation and soil erosion would occur until vegetation became reestablished. There would be a permanent wildlife habitat loss from construction of a road, and a short-term displacement of wildlife from road or other right-of-way construction. There would be a loss of raptors from a powerline.

Open off-road vehicle use would impact cultural resource features, such as fire hearths. There would be a permanent loss of vegetation, soil erosion would increase and water quality could decrease as new off-road vehicle trails and roads were established. Wildlife would be displaced during open off-road vehicle use.

Alternative B

Restricting activity in the area would decrease the potential for vandalism, unauthorized collection and disturbance to cultural sites.

Less blading would occur from conditional fire suppression, which would minimize surface disturbance to cultural resources. The scenery would be affected from allowing more of the area to burn.

Not allowing a wood product sale would cause people to gather firewood elsewhere.

Closing geophysical operations would interfere with complete data acquisition. This would affect leasing and lease development decisions in the area.

Closing off-road vehicle use would be a potential loss of 30 user days for hunting.

Not allowing wood product sales, rights-of-way or off-road vehicle use would lessen soil erosion and help protect vegetation and wildlife habitat.

Alternative C (Preferred)

Not allowing a wood product sale would cause people to gather firewood elsewhere.

Off-road vehicle impacts discussed under Alternative A would still occur on the roads and trails designated for use. Limiting off-road vehicle use would lessen erosion in the area, benefiting cultural resources, vegetation for livestock and wildlife, and water quality. There would be a potential loss of 30 user days for hunting.

Impacts from rights-of-way would be the same as Alternative A. Impacts from conditional fire suppression would be the same as Alternative B.

EAST PRYOR MOUNTAINS

ASSUMPTIONS

There is no potential for coal or nonenergy leasable minerals and a low potential for oil or gas development. There would be 1 prescribed fire in 5 years and 2 in 20 years. There would be 1 wildfire in 5 years and 4 in 20 years. Each planned and unplanned fire would disturb 160 acres. Three permits for firewood in 5 years and 10 permits in 20 years would disturb 1 acre each. One linear right-of-way constructed in 5 years and 2 in 20 years would disturb 1 acre each. See appendix 2 for the reasonable foreseeable development scenario for locatable mineral mining in the East Pryor Mountains.

IMPACTS FROM MANAGEMENT ACTIONS COMMON TO ALL ALTERNATIVES

Not allowing wood product sales would cause people to go elsewhere for materials.

By retaining this area in public ownership, the cultural and paleontological resources would be available to qualified researchers for scientific study and to interested publics for their enjoyment. Wild horses could be viewed by the public. There would be an increased potential for harassment to the horses through recreational activity. There would be an increased potential for disturbance to cultural and paleontology resource sites, unauthorized collection of artifacts and vandalism as a result of recreational activities.

IMPACTS FROM MANAGEMENT ACTIONS SPECIFIC TO EACH ALTERNATIVE

Alternative A

Allowing 5 claim stakings in 20 years for locatable mineral exploration would impact vegetation, causing soil erosion and damaging water quality. There would be a short-term loss of habitat and forage for wild horses and wildlife, and displacement of wild horses and wildlife. Exploration activity would cause a short-term minor increase in economic activity. See appendix 2, Reasonable Foreseeable Development scenario, East Pryor Mountains for cumulative impacts.

Allowing noncommercial collection of common invertebrate and plant fossils would provide a recreational opportunity. Some significant fossil material could be inadvertently collected. Allowing collection could result in the discovery of new and significant vertebrate fossil localities.

Alternative B

Withdrawing the area from locatable mineral entry would help protect the vegetation for wild horses and wildlife and lessen the visual impacts in the wilderness study areas. Short-term increases in employment and spending would not occur. See appendix 2, 'Reasonable Foreseeable Development Scenario East Pryor Mountains" for additional impacts.

Not allowing the noncommercial collection of common invertebrate and plant fossils would be an inconvenience to those recreation enthusiasts who would have to go elsewhere and would result in the loss of opportunities for new discoveries of vertebrate fossils.

Alternative C (Preferred)

Allowing noncommercial collection of common invertebrate and plant fossils would provide a recreational opportunity. Some significant fossil material could be inadvertently collected. Allowing collection could result in the discovery of new and significant vertebrate fossil localities.

Impacts from other actions would be the same as Alternative B.

MEETEETSE SPIRES

ASSUMPTIONS

There is no resource potential for coal or nonenergy leasable minerals. One wildfire and 1 prescribed fire in 20 years would disturb 100 acres each. One commercial timber sale for 100,000 board feet in 20 years would disturb 30 acres. One linear right-of-way in 20 years would disturb 1 acre. Four holes for locatable mineral exploration in 20 years would disturb less than 5 acres each. There would be no new locatable mineral mines in 20 years. Four mineral material sales and permits in 20 years would disturb .25 acres each. Five oil or gas wells and 1 coalbed methane well in 5 and 20 years would disturb 5 acres each. Geophysical exploration for oil and gas shot holes would disturb .25 acres in 20 years. Off-road vehicle use would disturb 3 acres in 5 years and 6 acres in 20 years.

IMPACTS FROM MANAGEMENT ACTIONS COMMON TO ALL ALTERNATIVES

Retaining Meeteetse Spires in public ownership would help protect cultural and paleontological sites. Obtaining an easement across state land would provide legal access into the area, enhance recreational opportunities such as hiking and hunting, and increase the number of visitors to the area. Closing the area to oil and gas leasing would exclude collection of rents, royalties and bonuses by the Federal Government. Removal of a strategic resource and obtaining geophysical data would be prohibited.

IMPACTS FROM MANAGEMENT ACTIONS SPECIFIC TO EACH ALTERNATIVE

Alternative A

There would be a temporary loss of vegetation from surface disturbing activities. Due to its location on the top of the limestone ridges, *Shoshonea pulvinata*, a rare plant species, would not be impacted by surface disturbing activities.

Activity in the area would increase the potential for vandalism, unauthorized collection and disturbance to cultural and paleontological sites.

Blading could occur with intensive fire suppression, which would cause impacts to cultural or paleontological resources. There would be a loss of vegetation, a temporary loss of forage for livestock and wildlife and visual impacts from the burned forest. Impacts to soils would be short-term, as erosion would occur until plants became reestablished. Depending on the intensity of the wildfire, plant species composition could change to an earlier seral stage.

A timber sale for 100,000 board feet would provide $10,000 in revenue. At the current annual harvest level across the Billings RMP area, this sale would represent approximately two to three percent of the total harvest activity over the next 20 years. Given the level of activity occurring on private, state and federal lands across the south central region of Montana and statewide, this sale would contribute only in a minor way to regional economic activity. The harvest could occur during winter and offer an opportunity for a smaller local mill to operate rather than close from lack of supply. Removing forest canopy would increase grass and shrub forage production for livestock. It would also remove thermal and hiding cover for elk and mule deer.

Not allowing wood product sales would lessen the opportunity for man-caused fires, and increase the fuel load which could cause more severe fires. Fewer tracks would be created from travelling off-road for forest product removal, helping to preserve the visual qualities of the area. Less disturbance in the area would decrease soil erosion. Small wood product sales would maintain or possibly enhance elk calving, winter range and nongame species habitat. Proper interspersion of cover and openings would create more diverse habitat for many species.

During right-of-way construction, there would be a permanent loss of vegetation for livestock and wildlife from a road or a temporary 1 to 2 year loss of vegetation from other right-of-way activity, such as a powerline. Soil erosion would temporarily occur until vegetation was reestablished. There would be an increase of suspended solids off the construction area.

Allowing locatable mineral exploration would cause a short-term minor increase in economic activity.

Allowing four mineral material sales would net approximately $120 of revenue.

Livestock forage would be lost during the life of the oil or gas wells. Until vegetation was reestablished, erosion would temporarily occur. There would be an increase of suspended solids off the oil and gas construction areas.

Open off-road vehicle use would result in a short-term displacement of wildlife and a long-term habitat loss. Impacts including noise, activity, people and vehicles would impact the elk winter range.

Alternative B

Less blading could occur with conditional fire suppression, which would minimize impacts to cultural resources. There would be visual impacts from allowing more of the area to burn.

Not allowing a timber sale would cause people to go elsewhere for those materials.

Excluding livestock grazing would cancel 28 animal unit months. Allotments affected would be: Moore, 1,295 public animal unit months, 12 animal unit months would be cancelled; and Sunlight, 1,021 public animal unit months, 16 animal unit months would be cancelled. These reductions represent one percent of each lessees' permitted animal unit months. There would be an approximately $38 reduction in grazing receipt revenues. Construction of .5 miles of fence would cost BLM approximately $2,000 and $25 annually for fence maintenance.

Withdrawing locatable minerals from entry would cause a minor decrease in short-term economic activity over the next 20 years. Short-term increases in employment and spending would not occur.

Not allowing mineral material sales or permits would cause sales at other locations that may be less convenient.

Impacts from closure of geophysical operations would be the inability to acquire subsurface data in those areas and interference with complete data acquisition. Lack of or incomplete geophysical data could affect leasing and lease development decisions in adjacent areas. The number of leases sold and the number of wells drilled could be reduced.

Wildlife preferring heavier cover would increase with the exclusion of livestock grazing and no oil and gas operations. Disturbance to wildlife would decrease with the exclusion of geophysical activity and oil and gas operations.

Closing off-road vehicle use would lessen erosion in the area, benefiting cultural resources, vegetation for livestock and wildlife, and water quality. Hunters may go elsewhere rather than trying to retrieve game by horse or on foot.

Alternative C (Preferred)

Allowing selected timber sales for 100,000 board feet would provide $10,000 in revenue. At the current annual harvest level, this would represent approximately two to three percent of the total harvest activity over the next 20 years. Given the level of activity occurring on private, state and federal lands across the south central region of Montana and statewide, these sales would contribute only in a minor way to regional economic activity. The harvest could occur during winter and offer additional opportunities for smaller local mills to operate rather than close from lack of supply. Allowing selected timber sales would increase forage for livestock and wildlife.

Not allowing wood product sales would lessen the opportunity for man-caused fires, and increase the fuel load which could cause more severe fires. Fewer tracks would be created from travelling off-road for forest product removal, helping to preserve the visual qualities of the area. Less disturbance in the area would decrease soil erosion. Not allowing wood product sales would help protect the elk calving and winter range and nongame species habitat.

Impacts from closure of geophysical operations in the sensitive plant area would be the inability to acquire subsurface data in those areas and interference with complete data acquisition. Lack of, or incomplete geophysical data could affect leasing and lease development decisions in adjacent areas. The number of leases sold and the number of wells drilled could be reduced.

Limiting off-road vehicle use would lessen erosion in the area, benefiting cultural resources, vegetation for livestock and wildlife, and water quality. There would be less opportunity for that type of recreational use for the public. Hunters may go elsewhere rather than trying to retrieve game by horse or on foot.

The impacts from conditional fire suppression, withdrawing locatable minerals from entry, and not allowing mineral material sales or permits would be the same as Alternative B.

PETROGLYPH CANYON

ASSUMPTIONS

There is a lack of fuel for fires. There is no potential for coal, locatable minerals or mineral materials. The area does not have commercial timber for timber sales. Five sales for dead juniper in 5 years and 20 sales in 20 years would disturb 1 acre each. There would be 1 water well developed in 20 years and 1 mile of unbladed fence. One oil or gas well in 20 years would disturb 5 acres.

IMPACTS FROM MANAGEMENT ACTIONS COMMON TO ALL ALTERNATIVES

By retaining the area in public ownership, the cultural resources would be available for scientific study by qualified researchers and to interested publics for their enjoyment.

IMPACTS FROM MANAGEMENT ACTIONS SPECIFIC TO EACH ALTERNATIVE

Alternative A

Activity in the area would increase the potential for vandalism, unauthorized collection and disturbance to cultural and paleontology sites.

Wood product sales would provide revenue of approximately $50 each year.

Not allowing rights-of-way or mineral development would help protect cultural resource sites from disturbance, vandalism and the unauthorized collection of artifacts.

Allowing limited off-road vehicle use would adversely affect vegetation and soils in this arid environment.

Alternative B

Less activity in the area would decrease the potential for vandalism, unauthorized collection and disturbance to cultural sites.

Closing wood product sales would cause local furniture makers to go elsewhere for materials. Costs to furniture makers may increase if they have to travel greater distances, or have to substitute other materials. There would be less wildlife disturbance and species preferring forest habitat would increase.

Closing the area to oil and gas leasing would exclude collection of rents, royalties and bonuses by the Federal Government. Removal of a strategic resource and obtaining geophysical data would be prohibited. There would be no loss or disturbance to wildlife habitat from oil or gas activities.

Impacts from closure of geophysical operations would be the inability to acquire subsurface data in those areas and interference with complete data acquisition. Lack of or incomplete geophysical data could affect leasing and lease development decisions in adjacent areas. The number of leases sold and the number of wells drilled could be reduced.

Closing off-road vehicle use would decrease the traffic to the rock art site and lessen erosion in the area, benefiting cultural resources, vegetation and water quality. There would be less opportunity for off-road vehicle use for hunting. Wildlife disturbance would be reduced.

Alternative C (Preferred)

The impacts would be the same as Alternative B.

STARK SITE

ASSUMPTIONS

There is no resource potential for coal, locatable minerals, nonenergy leasable minerals or commercial timber for a timber sale. One wildfire in 20 years would disturb 800 acres. One salvage firewood sale in 20 years would disturb 30 acres. One right-of-way in 20 years would disturb 2.5 acres. Range improvements would include 1 pipeline with a stock tank, and 30 acres of vegetation manipulation for chisel-seeding. One mineral material permit or sale in 5 years and 4 in 20 years would disturb 1 acre each. One oil or gas well in 20 years would disturb 5 acres. Geophysical exploration for oil and gas would disturb 5 acres in 5 years and 20 acres in 20 years. Off-road vehicle use would disturb 5 acres in 5 and 20 years.

IMPACTS FROM MANAGEMENT ACTIONS COMMON TO ALL ALTERNATIVES

By retaining this area in public ownership, BLM could make the cultural resources available for scientific study.

IMPACTS FROM MANAGEMENT ACTIONS SPECIFIC TO EACH ALTERNATIVE

Alternative A

Activity in the area would increase the potential for vandalism, unauthorized collection and disturbance to cultural sites.

Intensive fire suppression has the potential to impact cultural resource sites from blading during fire-line construction. Depending on the intensity of the wildfire, vegetation would change to a lower seral stage for the short-term and soil erosion would occur until vegetation becomes reestablished. Wildlife habitat would be removed and there would be a short-term displacement of wildlife. Burned areas would be a visual impact, but esthetics would recover after one year.

One salvage firewood sale would be an economic benefit of $20.

Right-of-way construction would remove vegetation and soil erosion would occur in the short-term. There would be a permanent wildlife habitat loss from road construction and a short-term displacement of wildlife from road or other right-of-way construction.

Allowing mineral material sales would result in approximately $30 of revenue in 5 years and $120 in 20 years.

Allowing oil and gas leasing with a No Surface Occupancy stipulation would help protect the cultural resources from disturbance.

Open off-road vehicle use could impact cultural resource features, such as fire hearths. Wildlife would be displaced during open off-road vehicle use. There would be a permanent loss of vegetation, soil erosion would increase and water quality would be affected as new off-road vehicle trails and roads were established.

Alternative B

Less activity in the area would decrease the potential for vandalism, unauthorized collection and disturbance to cultural sites.

Less blading would occur with conditional fire suppression, which would minimize impacts to cultural resources, vegetation, soil and water quality.

Not allowing a salvage firewood sale would cause people to go elsewhere for firewood. Nearby areas would be available to meet the demand.

Not allowing mineral material sales or permits would be an inconvenience to operators who would have to go elsewhere.

Closing the area to oil and gas leasing would exclude collection of rents, royalties and bonuses by the Federal Government. Removal of a strategic resource and obtaining geophysical data would be prohibited.

Impacts from closure of geophysical operations would be the inability to acquire subsurface data in those areas and interference with complete data acquisition. Lack of or incomplete geophysical data could affect leasing and lease development decisions in adjacent areas. The number of leases sold and the number of wells drilled could be reduced.

Closing off-road vehicle use would lessen soil erosion in the area, benefiting cultural resources, vegetation for livestock and wildlife, and water quality. There would be less opportunity for that type of recreational use for the public.

Alternative C (Preferred)

Less activity in the area would decrease the potential for vandalism, unauthorized collection and disturbance to cultural sites.

Not allowing a salvage firewood sale would cause people to go elsewhere for firewood. Nearby areas would be available to meet the demand.

Limiting off-road vehicle use would lessen erosion in the area, benefiting cultural resources, vegetation for livestock and wildlife, and water quality. There would be less opportunity for that type of recreational use for the public.

The impacts from allowing oil and gas leasing with a No Surface Occupancy stipulation would be the same as Alternative A. The impacts from conditional fire suppression, and not allowing mineral material sales or permits would be the same as Alternative B.

WEATHERMAN DRAW

ASSUMPTIONS

There is no resource potential for coal, nonenergy leasable minerals, or commercial timber for timber sales. There would be 5 wood product sales in 5 years and 20 sales in 20 years. Each sale would disturb 1 acre. There would be 1 wildfire in 5 years and 4 in 20 years. There would be 1 prescribed fire in 5 years and 2 in 20 years. Planned or unplanned fires would disturb 160 acres each. One linear right-of-way constructed in 5 years and 2 in 20 years would disturb 1 acre each. Range improvements would include 1 water well, and 1 mile of unbladed fence in 20 years. One locatable mineral exploration in 20 years for bentonite or uranium would disturb 30 acres. Three mineral material permits or sales in 5 years and 10 in 20 years would disturb 3 acres each. Four oil or gas wells in 5 years and 7 wells in 20 years would disturb 5 acres each. Geophysical exploration for oil and gas would disturb 5 acres in 20 years. There would be 30 acres of disturbance in 5 years and 100 acres in 20 years from off-road vehicle use.

IMPACTS FROM MANAGEMENT ACTIONS COMMON TO ALL ALTERNATIVES

By retaining this area in public ownership, BLM can make the cultural resources available for scientific study.

IMPACTS FROM MANAGEMENT ACTIONS SPECIFIC TO EACH ALTERNATIVE

Alternative A

Activity in the area would increase the potential for vandalism, unauthorized collection and disturbance to cultural sites.

Intensive fire suppression would have the potential to impact cultural resource sites from blading during fire-line construction. Depending on the intensity of the wildfire, vegetation would change to a lower seral stage for the short-term and soil erosion would occur until vegetation becomes reestablished. Wildlife habitat would be removed and there would be a short-term displacement of wildlife. Burned areas would be a visual impact, but esthetics would recover after one year.

Revenue from wood product sales would be approximately $50 each year.

During right-of-way construction, there would be a temporary loss of vegetation. Soil erosion would occur until vegetation becomes reestablished. There would be a permanent wildlife habitat loss from the construction of roads, and a short-term displacement of wildlife from road and other right-of-way construction.

Impacts from allowing locatable mineral exploration would be a short-term minor increase in economic activity.

Allowing mineral material sales would be an economic benefit of approximately $90 in 5 years and $300 in 20 years.

Closing the area to oil and gas leasing would exclude collection of rents, royalties and bonuses by the Federal Government. Removal of a strategic resource and obtaining geophysical data would be prohibited.

Off-road vehicle use would cause erosion of the fragile soils. Wildlife would be displaced. There would be a permanent loss of vegetation. Soil erosion would increase and water quality would be affected as new off-road vehicle trails and roads were established.

Alternative B

Less activity in the area would decrease the potential for vandalism, unauthorized collection and disturbance to cultural sites.

Less blading would occur with conditional fire suppression, which would minimize impacts to cultural resources.

Not allowing wood product sales would cause people to go elsewhere for materials. Additional supplies could be found outside the proposed ACEC.

Withdrawing locatable minerals from entry would cause a minor decrease in short-term economic activity over the next 20 years. Short-term increases in employment and spending would not occur.

Not allowing mineral material sales would be an inconvenience to operators who would have to go elsewhere for their materials.

Closing the area to oil and gas leasing would exclude collection of rents, royalties and bonuses by the Federal Government. Removal of a strategic resource and obtaining geophysical data would be prohibited.

Impacts from closures of geophysical operations would be the inability to acquire subsurface data in those areas and interference with complete data acquisition. Lack of or incomplete geophysical data could affect leasing and lease development decisions in adjacent areas.

Closing off-road vehicle use would lessen erosion, benefiting cultural resources, vegetation for livestock and wildlife, and water quality. There would be less opportunity for that type of recreational use for the public.

Alternative C (Preferred)

Less activity in the area would decrease the potential for vandalism, unauthorized collection and disturbance to cultural sites.

Allowing oil and gas leasing with a No Surface Occupancy stipulation would affect drilling costs, royalties and the removal of a strategic resource. Wildlife habitat would be maintained.

Impacts from closing geophysical operations would be the inability to acquire subsurface data in those areas and interference with complete data acquisition. Lack of, or incomplete geophysical data could affect leasing and lease development decisions.

Limiting off-road vehicle use in the area would lessen erosion, benefiting cultural resources, vegetation for livestock and wildlife, and water quality. There would be less opportunity for that type of recreational use for the public.

The impacts from conditional fire suppression, withdrawing locatable minerals from entry, and not allowing wood product sales and mineral material sales or permits would be the same as Alternative B.

POWDER RIVER RMP AREA

BATTLE BUTTE

ASSUMPTIONS

There is no resource potential for forestry, locatables or nonenergy leasable minerals. One wildfire in 20 years would disturb 120 acres. One linear right-of-way in 5 years would disturb 25 acres. Two linear rights-of-way in 20 years would disturb 30 acres. There would be no new coal mines in 20 years. One sand and gravel permit or sale in 20 years would disturb 5 aces. There would be no new oil or gas wells in 20 years.

IMPACTS FROM MANAGEMENT COMMON TO ALL ALTERNATIVES

Retaining the area in federal ownership would provide long-term management for the cultural resources with a variety of possible management uses, such as conservation use, scientific use and public use. The site would remain available to the public for interpretation and provide an economic benefit to the local economy through tourism.

IMPACTS FROM MANAGEMENT ACTIONS SPECIFIC TO EACH ALTERNATIVE

Alternative A

There would be a short-term degradation in air quality from suspended particulates and gases during fire, right-of- way, mineral material, and off-road vehicle activities. Wind erosion and effects on air quality would continue until vegetation was reestablished.

Surface disturbing undertakings would be preceded by a cultural resource inventory. The site would be avoided or mitigated through data recovery. Mitigation would remove a portion of the battlefield.

Under intensive fire suppression, the fire would be immediately suppressed; less of the area may burn. There may be more surface disturbance in order to put out the fire, from hand lines and dozer lines.

Generally, fire suppression activities are emergency situations not preceded by cultural inventory. Blading the surface for dozer lines could damage, disturb or destroy cultural resource values, such as artifacts or features of the battlefield. There would be a temporary loss of grazing, and invasion of weeds, including leafy spurge, in the bladed areas.

Soil erosion, runoff, sedimentation, and water quality degradation would increase in the short-term from constructing hand lines or dozer lines and from the fire itself. As the vegetation becomes reestablished, these impacts would diminish.

Blading for suppression and the fire itself would cause a long-term loss of overstory vegetation (ponderosa pine, Rocky Mountain juniper, big sagebrush) followed by increases in understory vegetation and invasion of plants from adjacent plant communities.

The loss of vegetation would affect the scenery in the short-term. Wildlife species and recreation opportunities, such as hunting, would be temporarily displaced.

There would be a permanent loss of forage (3 animal unit months) from a major right-of-way, such as a railroad. A fenced right-of-way could impact livestock grazing use and access to stockwater supplies. The economic gain from allowing rights-of-way would be approximately $525 the first year and approximately $150 for every year after. In both the short-and long-term, linear rights-of-way impact soil and water resources where the surface-disturbing activity occurs. Soil erosion, compaction, sedimentation, and water quality degradation would occur during construction. There would be a loss of the plant community in the right-of-way. There would be a loss of wildlife habitat in the short-term.

Allowing a mineral material sale or permit for 100,000 cubic yards of sand and gravel would be an economic gain of approximately $50,000 in 20 years. Soil erosion, runoff, sedimentation, and water quality degradation would increase in the short-term from the loss of vegetation. There would be a short-term loss of habitat and forage for wildlife, and a loss of one animal unit month of forage for livestock until reclamation reestablished the vegetation. Allowing a mineral material sale or permit would alter the landscape in the long-term.

Impacts from closing geophysical operations would be the inability to acquire subsurface data in those areas and interference with complete data acquisition. Lack of, or incomplete geophysical data could affect leasing and lease development decisions. There would be less money available to the local economy from geophysical investigations.

Open off-road vehicle use could damage, disturb or destroy cultural resource values, such as artifacts or features of the battlefield. Open off-road vehicle use would disturb livestock and vegetation. Open off-road vehicle use would temporarily increase soil erosion, compaction, sedimentation, and water quality degradation.

Alternative B

Less blading would occur with conditional fire suppression which would be less destructive and damaging to cultural resources. Conditional fire suppression would increase the potential for coal fires.

Closing rights-of-way would be an economic loss of approximately $525 the first year, and approximately $150 for every year after. There would be no access to mineral materials.

Not allowing livestock grazing would cancel 9 animal unit months. Allotments affected are: Prairie Dog Creek, 1,439 public animal unit months, 9 animal unit months would be cancelled; and Quarter Circle U Ranch, 1,018 public animal unit months (although no animal unit months would be cancelled, 20 acres of this allotment are fenced into Battle Butte). There would be a loss of $45 annually in grazing fees. The regional economic impacts including direct, indirect and induced effects would be an estimated loss of $250 annual personal income and less than one job. Construction of 1.5 miles of fence would cost BLM approximately $8,800 with an additional $1,000 annually for fence maintenance.

Not allowing a mineral material sale may cause an inconvenience, such as greater hauling distance, to an operator. Mineral materials would be available in nearby areas.
Impacts from closing geophysical operations would be the inability to acquire subsurface data in those areas and interference with complete data acquisition. Lack of, or incomplete geophysical data could affect leasing and lease development decisions in adjacent areas. There would be less money available to the local economy from geophysical investigations.

There would be less opportunity for damaging, disturbing or destroying cultural values from closing off-road vehicle use.

Alternative C (Preferred)

Incomplete geophysical data could affect leasing and lease development decisions.

By staying on designated roads and trails, there would be less chance of disturbance and vandalism to cultural resources.

The impacts from conditional fire suppression; and not allowing rights-of-way, or mineral material sales or permits would be the same as Alternative B.

FINGER BUTTES

ASSUMPTIONS

There is no resource potential for wood products, coal or locatable minerals. One wildfire in 20 years would disturb the entire area. One linear right-of-way in 20 years would disturb 3 acres. One communication site in 20 years would disturb 5 acres. There would be 2 easements in 20 years with no disturbance. One water reservoir in 20 years would disturb 1 acre. One mile of new fence and maintenance in 20 years would disturb 2 acres. One mineral material permit or sale in 20 years for sand, gravel or rock aggregate would disturb 5 acres. One nonenergy leasable mineral permit for limestone in 20 years would disturb 1 acre. One oil or gas well in 20 years would disturb 5 acres. One seismic exploration in 20 years would disturb 1 acre.

IMPACTS FROM MANAGEMENT COMMON TO ALL ALTERNATIVES

By retaining the area in federal ownership, BLM would provide long-term management for the cultural resources.

IMPACTS FROM MANAGEMENT ACTIONS SPECIFIC TO EACH ALTERNATIVE

Alternative A

There would be a short-term degradation in air quality from suspended particulates and gases during fire, right-of-way, range improvement, mineral material, nonenergy leasable, geophysical and off-road vehicle activities. Wind erosion and effects on water and air quality would continue until vegetation was reestablished.

Under intensive fire suppression, the fire would be immediately suppressed; less of the area may burn. There would be surface disturbance to put out the fire, from hand lines and dozer lines.

Intensive fire suppression would help protect surface facilities.

Generally, fire suppression activities are emergency situations, not preceded by cultural inventory. Blading the surface for dozer lines could damage, disturb or destroy cultural resource values.

Soil erosion, runoff, sedimentation, and water quality degradation would increase in the short-term from constructing hand lines or dozer lines and from the fire itself. As the vegetation becomes reestablished, these impacts would diminish.

Blading for suppression and the fire itself would cause a long-term loss of overstory vegetation followed by an increase in understory vegetation and invasion of plants from adjacent plant communities.

The loss of vegetation would affect the scenery of the area in the short-term. Wildlife species and recreation opportunities, such as hunting, would be temporarily displaced.

Surface disturbing undertakings would be preceded by a cultural resource inventory. Significant sites would be avoided or mitigated through data recovery. Mitigation would remove portions of sites.

Allowing a linear right-of-way would be an economic gain of approximately $450 the first year and approximately $95 for every year after, depending on complexity. The linear right-of-way and the communication site would impact soil and water resources where the surface-disturbing activity occurs. Soil erosion, compaction, sedimentation, and water quality degradation would occur during construction. There would be a short-term loss of wildlife habitat from the loss of vegetation during right-of-way construction.

Range management activities affect watershed hydrology, due to vegetation removal and soil compaction associated with grazing and ground disturbance caused by reservoir and fence construction. There would be a loss of wildlife habitat in the short-term.

Allowing a mineral material sale or permit on 100,000 cubic yards of mineral materials would be an economic gain of approximately $50,000 in 20 years. There would be a short-term increase in soil erosion, runoff, sedimentation, and water quality degradation from the loss of vegetative ground cover during mineral material activity. As the area was reclaimed, vegetation would reestablish and the impacts would diminish. There would be a short-term degradation of scenic values and a loss of wildlife habitat in the short-term.

Allowing nonenergy leasable mineral leasing on 100 cubic yards of mineral would be an economic gain of approximately $100. There would be a short-term increase in soil erosion, runoff, sedimentation, and water quality degradation from the loss of vegetative ground cover during nonenergy leasable mineral activity. After reclamation, these impacts would diminish. Surface disturbance for nonenergy leasable mineral development would cause a short-term degradation of scenic values and a short-term loss of wildlife habitat.

One oil or gas well would be foregone in 20 years. The cumulative economic impact would be minor in relation to the total regional economic activity in the Powder River RMP area.

Rent Foregone	$	53,200
Bbls Forgone		37,431
Royalty Foregone		101,000
MCF Foregone		0
Royalty Foregone		0
Earnings Foregone		242,000

Open off-road vehicle use could damage, disturb or destroy cultural resource values. Open off-road vehicle use would disturb livestock, remove vegetation and temporarily increase soil erosion, compaction, sedimentation, and water quality degradation. There would be a short-term loss of wildlife habitat.

Alternative B

Less blading would occur with conditional fire suppression which would be less destructive and damaging to cultural resources.

Excluding rights-of-way would be an economic loss of approximately $450 the first year and approximately $95 for every year after. There would be no access to mineral resources.

Closing this area to livestock grazing would eliminate 181 public animal unit months out of 3,584 public animal unit months on four allotments. Allotments affected would be: McNight, 216 public animal unit months, 11 animal unit months would be cancelled; Finger Butte Ranch, 83 public animal unit months, 70 animal unit months would be cancelled; Hawksnest Creek, 980 public animal unit months, 30 animal unit months would be cancelled; Thomas (2,046 public animal unit months) and Walker (259 public animal unit months), 70 animal unit months would be cancelled. There would be a $900 annual loss in grazing fees. The regional economic impact including direct, indirect, and induced effects would be a loss of approximately $5,100 in personal income annually and less than one job.

Construction of 10 miles of fence to exclude livestock grazing would cost BLM $50,000 with an additional $4,000 annually for fence maintenance.

Not allowing a mineral material sale or permit may inconvenience the operator. Mineral materials would be available in adjacent areas.

Closing nonenergy leasable mineral leasing would be a loss of approximately $100 of revenue.

One oil or gas well would be foregone in 20 years. The cumulative economic impact would be minor in relation to the total regional economic activity in the Powder River RMP area.

Rent Foregone	$	53,200
Bbls Forgone		37,931
Royalty Foregone		101,000
MCF Foregone		0
Royalty Foregone		0
Earnings Foregone		242,000

Impacts from closing geophysical operations would be the inability to acquire subsurface data in those areas and interference with complete data acquisition. Lack of, or incomplete geophysical data could affect leasing and lease development decisions in adjacent areas.

Alternative C (Preferred)

Incomplete geophysical data could affect leasing and lease development decisions.

Impacts from rights-of-way avoiding the area would be inconvenience and potential increase in cost to the right-of-way holder. If a right-of-way were allowed, the impacts would be the same as Alternative A.

If directional drilling for oil and gas could not occur, impacts would be the same as described under Alternative B. Geophysical activities would increase soil erosion, runoff, sedimentation, and water quality degradation in the short-term. After reclamation, these impacts would diminish.

The impacts from livestock grazing and range improvements would be the same as Alternative A. The impacts from conditional fire suppression; and not allowing mineral material sales or permits, or nonenergy leasable mineral leasing would be the same as Alternative B.

HOWREY ISLAND

ASSUMPTIONS

One wildfire in 20 years would disturb 321 acres. Two permits for firewood in 5 years would disturb 5 acres. Five permits or sales for firewood in 20 years would disturb 10 acres. One linear right-of-way in 20 years would disturb 1 acre. There would be .5 miles of electric fence in 5 and 20 years disturbing 1 acre. Weed control would disturb 5 acres in 5 and 20 years. Seeding would disturb 50 acres in 5 years and 150 acres in 20 years. Brush clearing would disturb 20 acres in 5 and 20 years.

IMPACTS FROM MANAGEMENT COMMON TO ALL ALTERNATIVES

By retaining the area in public ownership, BLM would provide a unique riparian community. This Watchable

Wildlife area would be available to the public making it available for recreation, such as hunting.

IMPACTS FROM MANAGEMENT ACTIONS SPECIFIC TO EACH ALTERNATIVE

Alternative A

There would be a short-term degradation in air quality from suspended particulates and gases during fire, wood product and range improvement activities. Wind erosion and effects on air quality would continue until vegetation was reestablished.

Under intensive fire suppression, the fire would be immediately suppressed; less of the area may burn. There would be surface disturbance to put out the fire, from hand lines and dozer lines.

Intensive fire suppression would help protect surface facilities.

There would be a temporary loss of grazing, and invasion of weeds, including leafy spurge, in the bladed areas.

Soil erosion, runoff, sedimentation, and water quality degradation would increase in the short-term from constructing hand lines or dozer lines and from the fire itself. As the vegetation becomes reestablished, these impacts would diminish.

The loss of vegetation would affect the scenery of the area in the short-term. Wildlife species and recreation opportunities, such as hunting, would be temporarily displaced.

Thick cottonwood stands would protect the younger trees. The overstory would be reduced or destroyed from fire and change the microclimate. Some wetland species would disappear. Fire would degrade scenic values in the short-term and temporarily displace wildlife.

There would be a short- and long-term forage increase from wood product sales. Allowing wood product sales would be an economic benefit of approximately $20 in 5 years and approximately $50 in 20 years. Wood harvest activities would increase soil erosion, compaction, runoff, sedimentation, and water quality degradation in the short-term. Allowing wood product sales would impact wildlife that use dead trees. Firewood cutting could change microclimate and some riparian species could disappear.
During right-of-way construction, wind erosion and effects on air quality would continue until vegetation was reestablished. Allowing a right-of-way would be an economic benefit of approximately $380 the first year and $5 every year after. Soil erosion, compaction, sedimentation, and water quality degradation would occur during construction. There would be a long-term change in plant species along the right-of-way. There would be a loss of wildlife habitat in the short-term.

Livestock grazing would reduce the fire hazard. Range improvements would improve forage for livestock and wildlife. Range management activities would affect watershed hydrology, due to vegetation removal and soil disturbance associated with grazing and range improvements.

Weed spraying would affect reproduction of tree species in the long-term. These impacts would be mitigated by using selective (spot) spraying. There would be a loss of wildlife habitat in the short-term. Fences inhibit wildlife movement, but impacts would be mitigated by fencing specifications.

Limiting off-road vehicle use would decrease suspended particulates and gases. Because of the off-road vehicle use restriction, firewood near roads and trails would be harvested first, while firewood further off the trail may not be harvested. Limited off-road vehicle use would temporarily increase soil erosion, compaction, sedimentation, and water quality degradation on existing roads and trails.

Alternative B

Not allowing wood product sales would result in an economic loss of approximately $20 in 5 years and approximately $50 in 20 years.

Excluding a right-of-way would be an economic loss of approximately $380 for the first year and $5 for every year following.

Closing the area to livestock grazing would eliminate all 200 public animal unit months on the allotment, affecting 15 to 20 percent of the permittee's operation. There would be a $270 annual loss in grazing receipts. The regional economic impact including direct, indirect and induced affects would be an approximately $5,600 loss of person annual income and less than one job. BLM would incur a $500 annual maintenance cost for a temporary electric fence.

Alternative C (Preferred)

Allowing wood product sales would result in approximately $20 in 5 years and approximately $50 in 20 years of revenue.

Excluding a right-of-way would be an economic loss of approximately $380 for the first year and $5 for every year following.

Livestock grazing would reduce the fire hazard. Range improvements would improve forage for livestock and wildlife. Management activities would affect watershed hydrology, due to vegetation removal and soil disturbance associated with livestock grazing and range improvements.

Weed spraying would affect reproduction of tree species in the long-term. These impacts would be mitigated by using selective (spot) spraying. There would be a loss of wildlife habitat in the short-term. Fences inhibit wildlife movement, but impacts would be mitigated by fencing specifications.

Limiting off-road vehicle use would help minimize disturbance to wildlife species. There would be a temporary increase in soil erosion, compaction, sedimentation, and water quality degradation on the BLM road.

REYNOLDS BATTLEFIELD

ASSUMPTIONS

There is no resource potential for locatables or nonenergy leasable minerals. One wildfire in 20 years would disturb 336 acres. One sale in 5 years for 2 cords of firewood would disturb 5 acres. Four sales for 8 cords of firewood in 20 years would disturb 20 acres. One timber sale in 20 years for 10,000 board feet would disturb 40 acres. One post or pole sale in 20 years would disturb 20 acres. One linear right-of-way in 20 years would disturb 20 acres. Four miles of fence would disturb four acres. Weed control on 15 acres in 5 and 20 years would disturb 15 acres. One water pipeline in 20 years would disturb 6 acres. There would be no coal mines in 20 years. One mineral material permit or sale for 4,000 yards of scoria in 20 years would disturb 5 acres. There would be no new oil or gas wells in 20 years.

IMPACTS FROM MANAGEMENT COMMON TO ALL ALTERNATIVES

By retaining the area in federal ownership, BLM could provide long-term management uses for the site, such as conservation use, scientific use and public use. The site would remain available to the public for interpretation and provide an economic benefit to the local economy through tourism.

Under VRM Class II, the landscape would be maintained.

IMPACTS FROM MANAGEMENT ACTIONS SPECIFIC TO EACH ALTERNATIVE

Alternative A

There would be a short-term degradation in air quality from suspended particulates and gases during fire, wood product, right-of-way, range improvement, mineral material, and off-road vehicle activities. Wind erosion and effects on air quality would continue until vegetation was reestablished.

Under intensive fire suppression, the fire would be immediately suppressed; less of the area may burn. There would be surface disturbance to put out the fire, from hand lines and dozer lines.

Intensive fire suppression would help prevent coal fires.

Generally, fire suppression activities are emergency situations, not preceded by cultural inventory. Blading the surface for dozer lines could damage, disturb or destroy cultural resource values, such as artifacts or features of the battlefield.

There would be a temporary loss of grazing, and invasion of weeds, including leafy spurge, in the bladed areas.

Soil erosion, runoff, sedimentation, and water quality degradation would increase in the short-term from constructing hand lines or dozer lines and from the fire itself. As the vegetation becomes reestablished, these impacts would diminish.

The loss of vegetation would affect the scenery of the area in the short-term. Wildlife species and recreation opportunities, such as hunting, would be temporarily displaced.

Surface disturbing undertakings would be preceded by a cultural resource inventory. The site would be avoided or mitigated through data recovery. Mitigation could remove a portion of the battlefield.

Allowing wood product sales would be an economic benefit of approximately $10 for firewood in 5 years and approximately $40 in 20 years; approximately $1000 for a timber sale in 20 years; and approximately $100 for posts and poles in 20 years. The loss of the trees surrounding the site would result in increased erosion, degrading the site. Livestock forage would increase in the long-term. Soil erosion, compaction, runoff, sedimentation, and water quality degradation would increase in the short-term. Wood product sales would impact the microclimate and result in loss of vegetation species.

A right-of-way would impact forestry from the removal of trees. Allowing a right-of-way would be an economic benefit of approximately $500 for the first year and approximately $120 for every year after. There would be a temporary loss of 5 animal unit months ($10) from the right-of-way. Soil erosion, compaction, sedimentation, and water quality degradation would occur during construction. A right-of-way would impact vegetation from the loss of plant community and establishment of a new plant community. There would be a short-term loss of wildlife habitat.

Range management activities affect watershed hydrology, from vegetation removal and soil disturbance associated with grazing, and road, reservoir and fence construction. Allowing livestock grazing would reduce wildlife habitat in the short-term.

A mineral material sale or permit would be an economic benefit of approximately $2,000 in 20 years. There would be a temporary loss of 1 animal unit month. Soil erosion, runoff, sedimentation, and water quality degradation would increase in the short-term from the loss of vegetation. After reclamation, the vegetation would reestablish and these impacts would diminish. A mineral material sale would result in a loss of the plant community and establishment of a new plant community by reclamation. Wildlife habitat would decrease in the short-term.

Prohibiting data from geophysical studies would be an impact to resource information and inventory, which has a monetary value and benefit to the value of public resources. No money would be brought in to the local economy from geophysical investigations.

Open off-road vehicle use could damage, disturb or destroy artifacts or features of the battle site. Open off-road vehicle use would disturb livestock and temporarily increase soil erosion, compaction, sedimentation, and water quality degradation.

Alternative B

Less blading would occur with conditional fire suppression which would be less destructive and damaging to cultural resources. Conditional fire suppression would increase the potential for coal to catch fires, which could burn for indefinite lengths of time.

Not allowing wood product sales would be an economic loss of approximately $10 in 5 years and approximately $40 in 20 years. There would be a loss of approximately $1,000 from preventing a timber sale and a $100 loss from not allowing a post and pole sale. There would be a 10% loss of animal unit months over the long-term.

Closing rights-of-way would be an economic loss of approximately $500 the first year and approximately $120 for every year after.

Excluding livestock grazing would cancel 67 animal unit months. Allotments affected would be: Thompson Creek, 80 public animal unit months, 38 animal unit months would be cancelled; and Buffalo Creek, 2,740 public animal unit months, 29 animal unit months would be cancelled. There would be a $90 annual loss in grazing receipts.

In the Buffalo Creek allotment, the loss to the permittee would be approximately $2,950 of annual personal income and less than one job. The loss of animal unit months may impact the permittee, depending on his ability to adjust his operation. The economic impact to the Thompson Creek allotment would be a loss of approximately $1,000 of annual personal income and less than one job.

Construction of 4 miles of fence and purchasing 2 cattleguards to eliminate livestock grazing would cost BLM approximately $25,000 and $2,000 annually for maintenance.

Not allowing a mineral material sale may inconvenience an operator. Mineral materials would be available in adjacent areas.

Impacts from closing geophysical operations would be the inability to acquire subsurface data in those areas and interference with complete data acquisition. Lack of, or incomplete geophysical data could affect leasing and lease development decisions in adjacent areas.

By closing off-road vehicle use there would be less chance that cultural values could be damaged, disturbed or destroyed. There would be less damage to vegetation.

Alternative C (Preferred)

Wood harvest activities would increase soil erosion, compaction, runoff, sedimentation, and water quality degradation in the short-term. Tree removal would increase forage for livestock and wildlife in the long-term.

Allowing wood product sales would be an economic benefit of approximately $10 for firewood in 5 years and approximately $40 in 20 years; approximately $1000 for a timber sale in 20 years; and approximately $100 for posts and poles in 20 years.

Impacts from rights-of-way avoiding the area would be the same as Alternative B. If a right-of-way were allowed, the impacts would be the same as Alternative A.

Range management activities would affect watershed hydrology, due to vegetation removal and soil compaction associated with grazing and ground disturbance caused by pipeline and fence construction. Wildlife habitat would decrease in the short-term.

The inability to acquire subsurface data would interfere with complete data acquisition. Incomplete geophysical data could affect leasing and lease development decisions.

By limiting off-road vehicle use, there would be less chance that cultural values could be damaged, disturbed or destroyed. There would be less disturbance to vegetation.

The impacts from livestock grazing and range improvements would be the same as Alternative A. The impacts from conditional fire suppression and not allowing mineral material sales or permits would be the same as Alternative B.

SOUTH DAKOTA RMP AREA

FOSSIL CYCAD AREA

ASSUMPTIONS

There is no resource potential for mineral materials. There would be one timber sale for 20,000 board feet in 20 years. There would be 5 permits for wood product sales in 20 years. One linear right-of-way in 20 years would disturb one acre. One oil or gas well in 20 years would disturb 3.5 acres. See appendix 2, Reasonable Foreseeable Development Scenario, "Fossil Cycad Area" for locatable mineral mining assumptions in the area.

IMPACTS FROM MANAGEMENT COMMON TO ALL ALTERNATIVES

The following would be the regional economic impacts from foregoing one oil or gas well.

Rent Foregone	$	0
Bbls Foregone		51,083
Royalty Foregone		136,000
MCF Foregone		3,635
Royalty Foregone		1,000
Earnings Foregone		346,000

Closing oil and gas leasing would affect drilling costs, royalties and the removal of a strategic resource. Wildlife habitat would be maintained.

IMPACTS FROM MANAGEMENT ACTIONS SPECIFIC TO EACH ALTERNATIVE

Alternative A

Intensive fire suppression could result in impacts to cultural sites from dozer lines. New sites not previously recorded may also be revealed. Intensive fire suppression would help protect right-of-way facilities, such as power lines. There would be short-term impacts to air from smoke and dust from the equipment. Impacts would occur from dozer lines removing fossils and causing irreparable damage. Intensive fire suppression would decrease the loss of forage for livestock and wildlife. There would be impacts to vegetation from not being burned and plants would eventually become decadent. Soil erosion would increase from dozer lines and result in impacts to water quality. There would be a temporary loss of wildlife habitat.

A timber sale would provide $2,000 in sales revenue. Allowing wood product sales would generate $50 in 20 years. Increased activity would increase fire potential, although removing trees should result in a less severe fire. Slash materials would also increase fire potential. Vegetation loss from skid trails and roads would increase soil erosion. This loss would be temporary and would result in an increase in plant species diversity. Bird habitat would be displaced and forage would eventually increase for deer, elk and turkeys.

Disposing 320 surface and mineral acres would result in a loss of 92 animal unit months. This loss would be mitigated if these lands were exchanged rather than sold. Information on the fossil cycad resource that could be researched by the scientific community would no longer be available. Recreation would be impacted from the loss of recreational opportunities.

Locatable mineral exploration would cause a short-term minor increase in economic activity. See appendix 2, Reasonable Foreseeable Development Scenario, "Fossil Cycad Area" for cumulative impacts.

Allowing rights-of-way and locatable mineral exploration would impact air quality from suspended particulates during construction and operation. These activities could damage, disturb or destroy cultural resource values, displace wildlife and the livestock operation. Removal of trees and vegetation would increase soil erosion, and eventually result in off-site impacts to a perennial stream. These impacts would occur for the life of the project until rehabilitation takes place. There would be a decrease in plant diversity when rehabilitation takes place. Recreation opportunities would be impacted because development would be allowed.

During off-road vehicle use, there would be temporary dispersement of wildlife from harassment, and interference with hunting.

Allowing noncommercial collection of common invertebrate and plant fossils would provide a recreational opportunity. Some significant fossil material could be inadvertently collected.

Alternative B

There would be impacts to air from allowing fires to burn during conditional fire suppression. Impacts to cultural resources would decrease from less blading. Recreation, soil, water quality and wildlife habitat would be impacted because vegetation would be lost. The paleontology resource would be protected as no blading would occur. There would be a loss of livestock forage and range improvements.

Foregoing five firewood permits and one timber sale would reduce revenue to the federal government by $50 (firewood permits) and $2,000 (timber sale). A more severe fire could occur. These forest products would be available outside the boundaries of the ACEC. Closing the area to the sale of timber and other wood products would increase fuel load which would increase fire hazard.

Retaining the area in public ownership would help make the paleontology resource available for research and study. Recreation opportunities would also be available.

Excluding rights-of-ways would help prevent damage to the paleontological resource, which would increase the cost to the right-of-way permittee from rerouting.

Excluding livestock grazing would affect one allotment: Murdock, 97 public animal unit months, 97 animal unit months would be cancelled. This level of reduction would represent approximately 16 percent of the permittee's operation. It may cause the permittee to adjust his livestock operation on his private lands, reduce the herd size or obtain an alternative source of forage. The regional economic impact would be an approximately $2,700 loss of annual personal income and less than one job. Construction of five miles of fence would cost BLM approximately $7,500 and $200 annually for fence maintenance.

Withdrawing locatable minerals from entry would cause a minor decrease in short-term economic activity over the next 20 years. Short-term increases in employment and spending related to this activity would not occur.

Impacts from closing geophysical operations would be the inability to acquire subsurface data in those areas and interference with complete data acquisition. Lack of, or incomplete geophysical data could affect leasing and lease development decisions in adjacent areas.

Closing BLM roads and trails would be an inconvenience to the livestock operator and increase costs on the ranching operation. There would be an impact to recreation from loss of off-road vehicle use. The area would become more pristine. There would be less vegetation lost, decreasing soil erosion and water quality degradation. Fire hazard would be reduced.

Not allowing noncommercial collection of common invertebrate and plant fossils would help protect the fossil cycad area from vandalism.

Alternative C (Preferred)

Limiting off-road vehicle use would cause a loss of recreational opportunities.

The impacts from livestock grazing would be the same as Alternative A. The impacts from conditional fire suppression, retaining the public surface and minerals, withdrawing locatable minerals from entry, and not allowing timber, wood product sales, or rights-of-way would be the same as Alternative B.

Not allowing noncommercial collection of common invertebrate and plant fossils would help protect the fossil cycad area from vandalism.

CONCLUSIONS

There are approximately 39,145 public surface acres, 36,919 public coal acres and 37,079 other public mineral acres affected by the management actions in alternatives A, B and C. This acreage makes up a minor portion of the total surface and mineral acres in the three RMP areas - approximately 1,793,000 public surface and 10,304,000 public mineral acres.

None of the following critical elements of the human environment would be significantly affected by management actions prescribed in the preferred alternative: air quality, ACECs, cultural resources, prime and unique farmlands, floodplains, Native American religious concerns, threatened or endangered species, hazardous or solid wastes, water quality, wetlands or riparian zones, wild and scenic rivers, wilderness, or environmental justice. Table 3 summarizes the impacts by resource or program for the planning area.

TABLE 3
COMPARISON OF IMPACTS

	Alternative A	Alternative B	Alternative C
AIR QUALITY	There would be short-term impacts from oil and gas flaring; smoke; and dust from fire suppression, mineral development, rights-of-way and off-road vehicle use.	The impacts under Alternative A would not occur in the areas proposed for ACEC designation.	Same as Alternative B.
CULTURAL RESOURCES	Mitigating impacts from surface-disturbing activities could include removing sites or portions of sites. Data would be recovered from mitigation.	Not allowing surface disturbance would lessen activity in the area and help protect sites from vandalism.	Same as Alternative B.
FIRE MANAGEMENT	Intensive and conditional fire suppression would increase efficiency of extinguishing fires. Allowing timber sales would help reduce fire hazard by reducing fuel accumulation.	Conditional fire suppression may allow more of an area to burn. Not allowing wood product sales or timber sales would not help reduce the potential for fires.	Same as Alternative B.
FORESTRY	Wood product sales would be allowed on approximately 6,470 public surface acres. Wood product sales would not be allowed on approximately 30,460 public surface acres.	Wood product sales would not be allowed on approximately 36,930 public surface acres.	Wood product sales would not be allowed on 36,273 public surface acres and would be allowed on 657 public surface acres, some with restrictions.
	Timber sales would be allowed on approximately 1,616 public surface acres.	Timber sales would not be allowed on approximately 1,616 public surface acres.	Timber sales would not be allowed on 320 public surface acres and would be allowed with restrictions on 1,296 public surface acres.
LANDS	The public landownership pattern would be adjusted by disposing 320 acres of public surface and minerals (Fossil Cycad area).	There would be no impacts.	Same as Alternative B.

TABLE 3 (continued)
COMPARISON OF IMPACTS

	Alternative A	Alternative B	Alternative C
	Rights-of-way development would be allowed on approximately 9,405 public surface acres and excluded on approximately 29,740 public surface acres. There would be increased costs to operators from rerouting rights-of-way to avoid excluded areas.	Rights-of-way development would be excluded on approximately 39,145 public surface acres, increasing costs from rerouting.	Rights-of-way development would be excluded on approximately 37,104 public surface acres; and avoided on approximately 2,041 public surface acres. Avoidance would be less impacting than exclusion, as the right-of-way would be constructed if there were no impacts to the ACEC values and no feasible alternative route exists. There would be increased costs to operators from rerouting rights-of-way to avoid excluded areas.
LIVESTOCK GRAZING MANAGEMENT	There would be no impacts to livestock grazing management.	Excluding 582 animal unit months would increase costs or may cause management changes for 12 allotments in the planning area.	The impacts would be the same as Alternative A.
MINERALS			
Coal	There would be no impacts.	Same as Alternative A.	Approximately 456 public mineral acres (Battle Butte and Reynolds Battlefield) would be closed to coal leasing. As there are no new mines predicted in these areas in the next 20 years, there would be no impacts to coal leasing or development.
Locatable Minerals	Locatable mineral entry would be allowed on approximately 33,448 public mineral acres and withdrawn from entry on approximately 840 public mineral acres. There would be no impacts as these areas have no potential for locatable mineral mining.	Locatable minerals would be withdrawn from entry on 34,288 public mineral acres. Impacts would be the same as Alternative A.	Same as Alternative B.

TABLE 3 (continued)
COMPARISON OF IMPACTS

	Alternative A	Alternative B	Alternative C
Mineral Materials	Approximately 28,500 public mineral acres would be closed to mineral material permits and sales. There would be no impacts as materials could be recovered from other areas. Mineral material permits and sales would be allowed on approximately 8,019 public mineral acres.	Approximately 36,519 public mineral acres would be closed to mineral material permits and sales. Mineral materials would be available in other areas. There could be inconvenience to operators, such as greater hauling distances.	Same as Alternative B.
Nonenergy Leasable Minerals	There would be no impacts to nonenergy leasable mineral development in Alternative A.	Approximately 1,520 public mineral acres would be closed to nonenergy leasable mineral leasing. These minerals would be available in nearby areas.	Same as Alternative B.
Oil and Gas	Under Alternative A, 120 public mineral acres would be open to oil and gas leasing with lease terms. A No Surface Occupancy stipulation would apply to approximately 936 public mineral acres. This would require wells to be drilled offsite. Approximately 36,023 public mineral acres would be closed to oil and gas leasing, preventing the removal of a strategic resource and exclude collection of rent, royalties and bonuses by the federal government.	Under Alternative B, approximately 37,079 public mineral acres would be closed to oil and gas leasing. This would prevent removal of a strategic resource and exclude collection of rent, royalties and bonuses by the federal government.	Oil and gas leasing would be open with a No Surface Occupancy stipulation on 6,484 public mineral acres. Oil and gas leasing would not be allowed on approximately 30,595 public mineral acres. Impacts from No Surface Occupancy stipulations and closing areas to oil and gas leasing would be the same as Alternative A.
PALEONTOLOGY	Activity in the Bridger Fossil area would increase the potential for vandalism and disturbance.	Restricting activity would help protect the area.	Same as Alternative B.

TABLE 3 (continued)
COMPARISON OF IMPACTS

	Alternative A	Alternative B	Alternative C
	Disposing the Fossil Cycad area would make that scientific information unavailable to the public.	Retaining the area in public ownership would help make the scientific information available to the public. Restricting activity would help protect the area.	Same as Alternative B.
RECREATION	Visual resources would be impacted from surface disturbing activities and open off-road vehicle use on approximately 8,604 public surface acres. Off-road vehicle enthusiasts would benefit from the open off-road vehicle designation. Limiting off-road vehicle use on approximately 30,541 public surface acres would enhance visual resources by the elimination of new trails. There would be minimal impact to off-road vehicle enthusiasts as the majority of public lands in the three RMP areas would be open for off-road vehicle use.	Limiting off-road vehicle use on approximately 29,500 public surface acres and closing off-road vehicle use on approximately 9,645 public surface acres would enhance visual resources by the elimination of trails, but would restrict recreational activities, such as game retrieval during hunting. Designating ACECs would provide touring and other recreational opportunities for the public.	Impacts from limiting off-road vehicle use on approximately 38,905 public surface acres and closing off-road vehicle use on 240 public surface acres would be the same as Alternative B.
	Allowing noncommercial collection of common invertebrate and plant fossils on 30,395 public surface acres would provide a recreational opportunity in the Bridger Fossil, East Pryor Mountain and Fossil Cycad areas.	Not allowing noncommercial collection of common invertebrate and plant fossils on 30,395 public surface acres would help protect fossils in the Bridger Fossil, East Pryor Mountains and Fossil Cycad areas from vandalism.	Not allowing noncommercial collection of common invertebrate and plant fossils on 320 public surface acres would help protect the Fossil Cycad area from vandalism. Allowing such collection in the remaining areas would provide a recreational opportunity.

TABLE 3 (continued)
COMPARISON OF IMPACTS

	Alternative A	Alternative B	Alternative C
SOCIOECONOMICS	Economic impacts would result in little change from the existing situation and would not significantly affect the economy in the future.	There would be direct and indirect impacts from excluding wood product sales, eliminating livestock grazing and closing oil and gas leasing, but no cumulative affect to the economy in the future. Eliminating livestock grazing could lessen those permittees' standard of living.	Same as Alternative A.
SOIL AND WATER	Impacts to soil and water would vary. Surface-disturbing activities would cause minimal impacts to soil and water resources by increased soil erosion and sedimentation. Off-road vehicle use would cause erosion which could impact water quality.	Restricting activity in the ACECs would lessen soil erosion.	Same as Alternative B.
VEGETATION	Except in frequently used off-road vehicle areas, vegetation would improve over the next 20 years. Surface disturbing activities would cause short-term impacts, but vegetation would increase in the long-term. In open off-road vehicle areas, vegetation would continue to be removed.	Restricting off-road vehicle use and surface-disturbing activities would help improve vegetation.	Same as Alternative B.
WILDLIFE	Wildlife habitat would be removed and wildlife would be temporarily displaced as a result of surface-disturbing activities and off-road vehicle use.	Restricting surface-disturbing activities and off-road vehicle use would help enhance wildlife habitat.	Same as Alternative B.

CHAPTER 5

CONSULTATION AND COORDINATION

INTRODUCTION

In 1992, during the public participation phase of the Draft Miles City District Oil and Gas RMP Amendment and EIS, the Sierra Club and The Wilderness Society proposed six areas for ACEC designation: Fossil Cycad (South Dakota RMP area), Pryor Mountains, Pompeys Pillar, Bridger Fossil-Red Dome (Billings RMP area), Finger Buttes and Deadhorse Badlands (Powder River RMP area). BLM had already proposed Meeteetse Spires and Weatherman Draw (Billings RMP area) for ACEC designation in the document.

The Final Oil and Gas EIS (BLM, 1992) was protested by the Sierra Club. In summary, they asked that BLM assess the relevance and importance criteria for the nominated areas. The Record of Decision (ROD) for the document states

"The ROD includes the decision to withhold implementation of the leasing decisions in the Meeteetse Spires and Weatherman Draw areas. The two areas will be analyzed in greater detail for all resources and land uses in a separate Plan Amendment which will also analyze six other areas nominated as ACECs" (BLM, 1994).

A Federal Register notice was published April 6, 1995 announcing the BLM's notice of intent to plan for the eight areas nominated: Fossil Cycad, Pryor Mountains, Pompeys Pillar, Bridger Fossil-Red Dome, Finger Buttes, Deadhorse Badlands, Meeteetse Spires and Weatherman Draw. The public was asked to provide additional nominations, issues, concerns, or alternatives that should be addressed in the plan. Newspaper releases were issued during this period.

The following nominations were made: Pryor Mountains, Castle Butte, Stark Site, Twin Coulee Wilderness Study Area (Billings RMP area), Alzada Oaks, Battle Butte, Howrey Island, Matthews Wildlife and Recreation Area, Reynolds Battlefield, Buffalo Creek Wilderness Study Area and Zook Creek Wilderness Study Area (Powder River RMP area).

The nomination for Pompeys Pillar was already analyzed and designated in the Pompeys Pillar RMP Amendment and EA (BLM, 1996a). The remaining areas nominated internally and by the public were considered in the Draft Amendment.

In December 1997, approximately 350 copies of the EA and Draft Amendment were distributed for public comment at a cost of $1,000. A *Federal Register* notice was published December 29, 1997, announcing the availability and the comment period of the EA and Draft Amendment. The comment period closed March 9, 1998.

CONSULTATION WITH THE U.S. FISH AND WILDLIFE SERVICE ON THREATENED AND ENDANGERED SPECIES

As required by Section 7 of the Endangered Species Act of 1973, on December 11, 1997, BLM initiated informal consultation with the U.S. Fish and Wildlife Service to gather their opinion on the plan's effect to threatened and endangered species. The Fish and Wildlife Service concurred with BLM's "no effect" determination (see letters in Appendix 5).

COMMENTS AND RESPONSES

In the 92 letters received on the EA and Draft Amendment were over 380 comments. These letters are available for review at the Miles City Office. Approximately 40% of the comments were considered to be substantive comments on the content of the EA and Draft Amendment. The comments (1) addressed the adequacy, inaccuracies or discrepancies in the analysis; or (2) identified new impacts, alternatives or mitigation measures. The remainder of the comments were considered to be expressions of personal preference.

Comments have been grouped below by RMP area, proposed ACEC area, followed by BLM's response, and the public's preference statements. Comments made in regard to all of the proposed ACECs are located under "ALL" at the beginning of the section. For example, the comment, "In Meeteetse Spires, there is no indication in the EA that the BLM coordinated with the Forest Service" would be found under Billings RMP Area, "Meeteetse Spires." The comment "How was the ACEC team assembled?" would be found under "ALL" at the beginning of this section.

Often text revisions to the Final Amendment were considered to be the response; this is noted where appropriate. Although there is no response to comments that expressed a preference ("I like Alternative B") these statements have been carefully considered in the plan's development and the environmental analysis in the decision-making process.

ALL AREAS

COMMENTS

1. The question was asked: How much does this ACEC (plan) cost the tax payers of this county? "No known answer available at this time" quoted by BLM.

2. Does this put the Department of the Interior's entire budget in jeopardy when, at any time, an individual of the public can nominate an area? By law BLM must go to all lengths to investigate and document the area. BLM is opening Pandora's box to a large scale manipulation of the law to benefit a select few.

3. There would be no impact to livestock grazing management, restricting activities in the ACEC would lessen erosion, restricting off-road vehicle use and surface disturbing activities would improve vegetation. How do you restrict activities and not change management of grazing at the same time?

4. Economic impacts would result in little change. If you take away or restrict use, is this not restricting economic growth?

5. Designating ACECs would provide touring and other recreational opportunities. How does touring occur, without roads, when you limit off road use? How does hiking occur without trails?

6. On page 50 (Draft), There is a contradiction of terms. First it states there would be restriction of recreational activities, then it says designating ACECs would provide touring and other recreational opportunities for the public.

7. We have deep concerns over the adverse impacts ACEC designation could have on existing grazing or other resource management activities. We realize that many of the proposed ACEC designations exclude livestock grazing or other preexisting or authorized resource uses, but this exclusion does not address the issue of broader affects on a historical landscape.

8. A relevant use of much of the rural landscape in eastern Montana is agriculture, and the historical developments associated with this use are clearly evident in many areas. Historic properties could include several local grazing associations or grazing districts, such as the Mizpah-Pumpkin Creek Grazing Association created in 1928, in southern Custer County, as well as several other historic grazing districts which include federal and state lands within their boundaries. None of the existing ACECs address the historic role of agricultural settlement within the area. Would it be possible to consider some significant agricultural properties along with the existing ACECs, given the long term historic livestock operations within these areas?

9. Livestock grazing is a highly compatible use for many of the proposed ACEC designations, yet the protection/preservation of the complete historic rural landscape is not credited as a significant factor in the ACEC nominations. It is obvious that agriculture has served a significant role in the historic evolution of many of the features noted for ACEC, if not from our records of prehistory, then surely from our records of modern history (say the past 50 to 100 years). For example, farms or ranches being built in the shadow of significant natural features, or settlements being located next to wooded areas, or livestock management facilities located near significant features. Would it not be a reasonable assumption that any ACEC designation for a given area also include the significant use of the area in the context of a rural historic landscape under the provisions of the National Historic Preservation Act? If designation for these properties were possible it should also be noted that the existing livestock grazing use is more than compatible with other features on the landscape and future use of these areas for grazing purposes should also receive appropriate consideration for the funding of historic protection/preservation or other resource management projects.

10. It appears that much of this process has been outlined in previous EIS or other resource assessment documents, and the final proposed ACEC designations were prepared using this information. ACEC designations are to be used to offer special or unique features a higher level of protection or management, over and above that which it might be afforded under existing programs or management authority. In the ACEC EA and the draft plan amendment, it is not clear exactly how the existing resource management programs or authorities are failing to address management of the features or landscapes described for each project. Could you explain for each of the 12 ACECs just how your present management programs fail to address concerns for the protection or preservation of the existing features? Our concerns in this area include off-road vehicle use, fire suppression, and the development of future improvements for livestock management.

11. We would also like to know how the ACEC evaluation team or assessment team was assembled? The nominations were submitted under the 1992 Oil and Gas EIS, but it is not clear what procedures were used to solicit nominations, who was offered an opportunity to submit them, and how they were processed.

12. How, if all of the ACEC designations are adopted, would each of the special management programs for these areas be funded, and how will funding be allocated between all 12 projects?

13. It appears that the nominations were evaluated by the BLM for both relevance and importance under specific criteria, but how each evaluation was compared to the criteria is not established in the EA. If it is possible, we would like to see how each of the nominations were evaluated under each of the specific ACEC criteria and who participated in this process.

14. Close all 12 areas to fossil collecting.

15. I oppose the closing of the areas to fossil collecting.

16. The rockhobbyist would preserve for educational use by collecting to place in museums, schools and private collections rather than leaving lay to be destroyed by natures forces of weathering. Wouldn't fossils be of more benefit to mankind as teaching and study tools than they would be as weathered and eroded silt at the bottom of Bighorn Lake?

17. Control fossil hunting and collecting by deeming it off limits. The relics in the natural history areas must be preserved for future generations.

18. BLM said if the areas were designated ACEC the government would have more control over gas, oil and mineral exploration. If the government owns the mineral rights, there is nothing that will give them more control than they already have.

19. On page 4 the manual states there would be no development within the area and no exploration or development adjacent to these lands as a consequence of lease issuance. We feel that this statement is a taking of private property rights. In addition, the word adjacent could equal an unlimited area.

20. Approximately 45,056 public mineral acres would be closed off (to oil and gas leasing). BLM has inadvertently omitted the number of acres that are adjacent to these 45,056 public acres. BLM must supply all of the facts to the public for comment.

RESPONSES

1. We have since then determined that 500 copies of the document were printed at a cost of approximately $1,000. We anticipate additional cost for the proposed amendment as the mailing list grew by over 100 people.

2. Evaluating special values for these areas was conducted as part of the staffs' normal duties within regular duty time. No additional costs, beyond printing, have been spent on this effort. No special money was appropriated or budgeted. According to the Federal Land Policy and Management Act of 1976, BLM must develop relevance and importance criteria for any area nominated ACEC by the public. If BLM cannot immediately plan for an area nominated, in the interim, it must manage the area to protect those values that make it a potential ACEC. Designating ACECs is part of managing the public lands.

3. Managing an ACEC does not necessarily mean that all activities must be restricted. The activities restricted do not change grazing management per the exceptions. For example, in the Powder River RMP area, while off-road vehicle use is restricted, under BLM's proposed plan off-road vehicle use would be allowed for livestock grazing management practices.

4. The nominated sites represent a very small percentage of a larger area encompassing seven counties in southeastern Montana (and a small portion of South Dakota). When viewed in the context of the larger economy of southeast Montana, the impacts under Alternatives B or C would be small. In some cases, the economic impacts could be mitigated by offsite development. For example, restricting a right-of-way might be mitigated by choosing an alternate route; restricting oil and gas drilling activity might be mitigated through directional drilling; and restricting firewood permits may be mitigated by availability of other timber stands. The management prescriptions under Alternatives B and C would not necessarily restrict growth of the regional economy.

5. Most of the proposed ACECs are small in size. Developing new roads and trails would diminish the values BLM is trying to maintain and protect. BLM's proposed management would limit unnecessary roads and trails as well as restrict uncontrolled off-road vehicle use. Touring and recreational opportunities, such as hiking or photography, may occur without roads and trails.

6. Alternative B describes how recreational activities, such as game retrieval during hunting, would be restricted, but at the same time, other recreational opportunities, such as touring, would be available to the public.

7. None of the proposed ACECs are recorded as historical landscapes. In order to assess impacts to a historical landscape, the area must be examined, recorded and its significance to the National Register of Historic Places determined. According to National Register Bulletin 30, *Guidelines for Evaluating and Documenting Rural Historic Landscapes*, examination of a rural area "frequently requires the combined efforts of historians, landscape historians, architectural historians, architects, landscape architects, archaeologists and anthropologists." BLM does not have the data available to evaluate each of the proposed ACECs as historical landscapes.

   Where we have the data, impacts to individuals and the community in general are addressed in the analysis of environmental justice, economics, sociology, livestock grazing, cultural resources, vegetation and others. Existing livestock use is compatible with management of the proposed ACECs, as indicated by BLM's preferred decisions (livestock grazing management would continue as it is currently).

8. See response #7.

9. See response #7.

10. Impacts from how the areas are currently managed are found in Chapter 4, under Alternative A. For example, impacts from allowing off-road vehicle use, as it is currently, include short-term degradation in air quality; disturbance of cultural resources, livestock, and vegetation; a temporary increase in soil erosion, and in some cases, water quality degradation.

    Currently, these areas are managed under intensive fire suppression (Alternative A). Impacts, as described under Alternative A in Chapter 4, include potential blading from heavy equipment. Blading could destroy one of the proposed cultural ACECs, or remove special plants from the Meeteetse Spires area, for example. BLM proposes to change the management to conditional fire suppression. (Note: even under conditional fire suppression, heavy equipment may be used if life, limb or property is threatened. See definition in Glossary).

    There were no significant impacts identified from allowing livestock grazing improvements (Alternative C is the same as Alternative A).

11. As stated in Chapter 5, the document was prepared by resource specialists in the Billings, Miles City, and South Dakota field offices, and the Montana State Office. Chapter 5 also discuses how the Federal Register notice announcing BLM's intent to plan was published on April 6, 1995. Local newspapers were also given the news release. Anyone may submit a nomination at any time. The evaluation process BLM followed is described in Appendix 1 "ACEC Nominations".

12. If the Proposed Amendment is approved, a Decision Record will be signed. Some of BLM's recommendations may be implemented immediately, without any additional funding, such as closing an area to oil and gas leasing. Other management, such as designating roads and trails will be included in an implementation plan for each area. Discussions on how long it will take to implement a decision, and the funding needed for implementation each year would be addressed. These implementation plans would be coordinated with the public. Priority for funding the implementation plans will depend on the budget, staffing and other priorities in the field offices.

13. Each evaluation is discussed in the plan (see Appendix 1 under "Nominations.") The person who nominated the area must provide BLM with enough information to evaluate the area. BLM then determines if the areas meet relevance and importance and if special management attention is needed. That information is then reviewed by the public during the public comment period (that ended March 9).

14. See Chapter 2 for alternatives analyzed and Chapter 4 for impact discussions on fossil collecting.

15. See response #14.

16. See response #14.

17. See response #14.

18. BLM must manage its surface and minerals in accordance with its land use plans. Most mineral activity is currently allowed in each of the plans. The ACEC plan would change those plans so that activity is restricted or not allowed.

19. Those statements are made in regard to BLM-administered oil and gas development only. See text changes in Chapter 2, under "Alternatives Analyzed in Detail."

20. The number you refer to is shown in Table 3 of Chapter 4 under "Existing Management" (Alternative A). This number is the combined total for each individual area. The number now reads 36,023 public mineral acres due to changes for the Finger Buttes Area.

PREFERENCES

1. I am a member of the Sierra Club and the Oglala Sioux Tribe of Pine Ridge South Dakota. The Oglala Sioux Tribe and the various tribes in Montana take a great interest in how you manage their former lands especially those areas considered historically and culturally significant.

2. Close all 12 areas to oil and gas leasing and exploration, rights-of-way for highway and utility corridors, mineral sales and mineral claims.

3. Restrict ORV use in areas by either closing the areas or restricting their use to designated roads.

4. Motorized use in the 12 areas should be restricted and commercial uses should be banned.

5. ORVs in these areas need to be restricted in order to fully round out the preservation goals.

6. ORVs have no place in protecting the landscape except for people who cannot walk in.

7. Restrict off-highway vehicles to using the existing roads. We don't need more weeds spread around.

8. Restrict the use of RV's in the 12 areas or limit their use to designated roads.

9. Having been an outdoorsman all of my life, I have seen the escalating environmental damage from ORVs. We respectfully request that these 12 areas be closed to ORVs as well as fossil collecting, oil and gas exploration and mineral claims.

10. Restrict outdoor recreational vehicle use in the areas by closing or restricting ORV use to designated roads.

11. Close the 12 areas to ORV use as any limitations on ORV use in sensitive areas prove difficult to enforce.

12. Close all areas to ORV and snowmobile use.

13. Restrict ORV use by closing the areas or restricting their use to designated roads only.

14. The point of deeming an area of "critical environmental concern" is to immediately and competently protect it. This absolutely requires human uses and abuses to radically change.

15. Oil and gas leasing and exploration is counter-productive to declaration of "environmentally sensitive" areas.

16. While many historic uses of our federal lands are worthy of some level of special consideration, these uses must be balanced against the needs of the current families and communities that depend on those federal lands for their livelihoods. Please remember that the evolution of the landscape as we know it is a continuing process, and we should not be closing out the chapters being written today for the preservation of a single event or feature that is part of the bigger picture.

BILLINGS RMP AREA

Bridger Fossil Area

COMMENTS

1. The locating of pipeline, road and powerline rights-of-ways in the proposed Bridger ACEC would severely compromise the natural integrity of this area, as well as potentially improve access into the area which could result in increase theft of fossil resources.

2. Mineral material sales in the proposed Bridger Fossil ACEC should be only allowed as a way of removing overburden for future fossil exploration. The use of heavy machinery and massive earth moving vehicles could have devastating impacts on fossil resources.

3. In the Bridger Fossil area, because of the amount of earth which is moved for an oil or gas well pad construction and road access, the use of NSO stipulations on this very small site would make much more sense than using a controlled surface use stipulation.

4. In the Bridger Fossil Area, the plan failed to put in place a prohibition against fossil collecting. The BLM could better control access and fossil theft by requiring anyone exploring for any type of fossil in the area to be from a legitimate scientific institution and to get a permit. Perhaps placement of a sign or two along nearby public roads noting that fossil collection is illegal without a permit and listing a local phone number to call to report suspicious activity or illegal fossil collecting would help to deter illegal collection.

The general public is not necessarily aware that collecting these types of fossils is illegal and more education would raise awareness.

RESPONSES

1. See text changes in document. BLM now recommends Bridger Fossil area closed to oil and gas leasing, mineral material sales and permits, and rights-of-way. See Chapter 2 for consideration of closing fossil collecting.
2. See response #1.
3. See response #1.
4. See response #1.

PREFERENCES

1. The Bridger Fossil area should not be open to rights-of-way and mineral material sales as permitted in the preferred alternative. This area should have NSO stipulations for oil and gas development and a prohibition of fossil collecting except by legitimate scientific research institutions.

Castle Butte

COMMENTS

1. With the limited woodlands in the Castle Butte area, it seems inappropriate to allow wood product sales. The additional public access that would be required to have a timber sale in the area could also be detrimental to protecting the cultural resources at the site.
2. Since Castle Butte is only 185 acres it would seem prudent to limit oil and gas development with a NSO stipulation. Petroleum resource would be available through the use of directional drilling.
3. With the small size of Castle Butte, there is no need to allow rights-of-way to be located through the site, because they would only contribute to additional access and thus additional disturbance of the cultural values of the site.

RESPONSES

1. There is no commercial timber present for a timber sale, so that is not an issue addressed in this document. See text changes in Chapter 2, "Castle Butte" where BLM recommends the area closed to wood product sales under the preferred alternative.
2. There are no federal minerals in Castle Butte, therefore BLM cannot stipulate mineral actions.
3. The entire area is already accessible via a county road. Only rights-of-ways that avoid the significant cultural resource sites would be allowed.

East Pryors

COMMENTS

1. Expand the East Pryor Mountain Site to include the entire Crooked Creek Natural Area, a significant fossil area.
2. The East Pryor Mountain Site should be expanded to include the entire Crooked Creek Natural Area. This land is much too valuable to let slip away.
3. To ensure the East Pryor Mountains for prosperity, and to protect the continuity of the area for the flora and fauna at present, the East Pryor Mountain Site should be expanded to include the entire Crooked Creek Natural Area with all its precious fossils.
4. We request inclusion of Red valley and Gyp Springs as they support sensitive plant species including spotted bats. A species we believe are very ecologically beneficial to both the animal kingdom and human communities.
5. The area around Gyp Springs and north through the Red Valley is home to many sensitive plant species and rarely encountered plant communities. Maps from the Montana Natural Heritage Program indicate a high concentration of plant species of special concern in these areas.
6. The entire East Pryor Mountain ACEC, including Gyp Springs and the Red Valley should have limits to right-of-way location and be closed to vehicles except for the main road leading into the Pryor Mountains. Although most of the area right now is in Wilderness Study Area status, in the future this could change releasing the area for other uses and the ACEC designation should anticipate how the area would be managed if WSA status were removed by Congress.

The EA appears to not address the issue of off-road vehicle use for the East Pryor Mountains area. However, we support "special management" that closes these areas to off-road vehicles and restrict any vehicle use to officially established BLM roads.

7. We urge the BLM to limit off-road vehicle use to the main road leading to the Pryor Mountains. The Pryors desert environment is very fragile. Off-road vehicle tracks leave a lasting mark on the land and it takes years to recover vegetation.

RESPONSES

1. The Crooked Creek Natural Area is already included, in its entirety, in the boundary of the Pryor Mountain Wild Horse Range (the recommended East Pryor Mountain ACEC). See Appendix 1 for text changes evaluating the area for its fossil resources.

2. See response #1.

3. See response #1.

4. Each of the areas were evaluated for ACEC designation. See Appendix 1, under "The Pryor Mountains Area." That section discuses the criteria that were not met. The plant species are only locally significant. The only records of Spotted Bats are east of the area. Dave Worthington, (1990), captured spotted bats at four locations- all east of Crooked Creek and on National Park Service lands. Horseshoe Bend Campground, Layout Creek Ranger Station, Four-eared Bat Cave, and Deadman's Creek inlet into Bighorn Canyon.

   Mountain plovers are not a threatened or endangered species, but are candidates. One or two birds were observed by the Audubon Society 1996 and 1997 near Petroglygh Canyon. We do not have the data to determine if the birds were breeding in the area or were migrating through the area.

5. See response #4.

6. The entire East Pryor Mountain proposed ACEC is recommended to be closed to right-of-ways (see Management Common in Chapter 2). Gyp Spring and Red Valley are not recommended for designation and so are not analyzed in this plan.

   See Chapters 2 and 4 where limited off-road vehicle use is considered and analyzed in "Management Common to All Alternatives" under "East Pryor Mountains."

7. See response #6.

PREFERENCES

1. Please give serious consideration to adding several hundred acres into the East Pryor Mountain ACEC and investing in the protection critical habitat.

2. Add to the East Pryor Mountain designation the Western Red Pryor Mountain and any riparian areas.

3. We request inclusion of Red Valley and Gyp Springs as they support sensitive plant species including spotted bats. A species we believe are very ecologically beneficial to both the animal kingdom and human communities.

4. The Pryors are a very special place that receives heavy recreational use and provides habitat to many sensitive and rare plant and animal species. Because of this, at the very least, the boundaries of the East Pryor Mountain ACEC should be expanded to the south and west, and that stronger protection should be placed on the area.

5. Gyp Springs most certainly meets the "importance" criteria for ACEC designation. According to BLM, Gyp Springs is a known water source for the Spotted Bat, a species considered "sensitive" by the USFS.

6. Include Gyp Springs and Red Valley for their sensitive species including spotted bats, mountain plovers as well as interesting geology.

7. Add Red Valley, and the West Pryors Limestone Cuesta areas to the protected areas. Not only is their geology and animal life rare and exceptional, but they're beautiful areas.

8. Gyp Springs and Red Valley for their animal species including spotted bats and mountain plovers which well deserve protection. This area is geologically spectacular and needs to be preserved for present and for the future.

Meeteetse Spires

COMMENTS

1. Due to its limited size and past interest in oil and gas exploration, Meeteetse Spires should be placed off-limits to oil and gas leasing and any form of geophysical exploration, including exploration via air. Because of the size of well pads and impacts of access roads and considering that the area being only 960 acres, an NSO or no lease designation would make much more sense.

The well that was drilled nearby along Line Creek Plateau caused considerable public outcry. The Forest Service has put its lands adjacent to Meeteetse Spires off-limits to leasing and the BLM should do the same.

2. In Meeteetse Spires, the BLM preferred "special management" should be consistent with the USFS eventual management of the adjacent Line Creek Plateau area - an area the USFS is considering for Research Natural Area designation. However, there is no indication in the EA that BLM has coordinated with the USFS to develop common management prescriptions.

3. In Meeteetse Spires, the roads and trail would remain open year around unfortunately are not identified anywhere in the EA nor in map 3. Therefore the public cannot discern which roads and trails will remain open under the preferred alternative C. It is essential that the public be given this information prior to a decision being made. Furthermore, it is important for the commenting public to know if these "open" roads and trail are indeed official BLM recognized roads and trails and part of BLM's existing transportation plan and are presently (and in the future) being maintained with budgeted BLM funds. Or, in the alternative, are these roads and trails that are to remain open just defacto "ghost" routes created by past usage. A reason for concern is this statement at p.5:

   "An easement across state land (T .8 S., R. 20 E., Section 36) would be obtained."

   This statement would indicate that the existing road or trail within the area and to be served by this acquired easement may not be an official BLM transportation plan road. Please clarify, before making a decision, whether the roads and trails recommended open for motorized use are in fact official BLM designated roads and trails.

4. It is not explained in the EA how keeping these unidentified roads and trails open to motorized use is the type of ACEC "special management" that protects the ecological integrity of the area (the primary purpose of the ACEC designation). Neither does the EA explain how open roads and trails protect the identified rare plant species; lessen erosion; benefit cultural resources, benefit vegetation for livestock and wildlife and benefit water quality. Finally there is no explanation in the EA explaining how opening these roads and trails complies with the requirements of Executive Order 11644, Use of Off-Road Vehicles on Public Lands.

   The EA at p. 32 does not discuss the extent to which open roads and trails are the kind of "special management" needed to protect and prevent irreparable harm to the natural integrity. The motorized use in the Preserve/ACEC will likely be difficult to control and limit to designated roads and trails. A consequence of this will likely be a reduction in the area's natural integrity rather than maximum protection. In addition to those impacts in the EA (and identified above) motorized use will cause the emission of pollutants toxic to sensitive plants, cause incompatible noise, impact other users seeking solitude and natural beauty of an ACEC, and user safety concerns along trails. We therefore urge that "special management" for the Preserve/ACEC be managed as an area restricted from off-road vehicle use.

5. The extent to which proposed motorized restriction to roads and trails will be enforced and monitored by BLM for effectiveness should have been made known to the public in the EA and definitely should be committed to and spelled out in the Preserve/ACEC management.

6. Will any federal speed and noise limits or size of party restrictions apply to off-road users of these open roads and trails? If not consideration must be given to implementing these safeguards to protect natural values and users of the Meeteetse Spires area.

RESPONSES

1. See Chapter 2, Alternative C, under Management Common To All Alternatives" where Meeteetse Spires is now closed to oil and gas leasing and BLM proposes no change. Geophysical exploration will be restricted to protect the sensitive plants.

2. BLM's proposed decision was a cooperative effort between the BLM, Forest Service and the private landowner.

3. There are no roads located within the BLM transportation maps. There is a county road that accesses the area that would remain open. Roads and trails that will remain open to vehicle travel in the proposed Meeteetse Spires ACEC will be determined in an implementation plan with public input.

4. Under Executive Order 11644, agencies were to identify zones of areas where off-road vehicle use would be permitted and not permitted. Under current management, off-road vehicles are permitted in the area. BLM proposes to change that land use plan decision to allow use on designated roads and trails only. The rare plant species, Shoshonea pulvinata, is located on the tops of the spires, where no roads or trails are located. Re-

sources benefit from controlling off-road vehicle use in the area.

When these roads are open (during hunting season) this area is monitored very closely by the land owner, BLM, and the Montana Depart of Fish, Wildlife and Parks. A representative is there every weekend and at least once during the work week. Heavy use occurs when the plants are dormant and the possibility of plant damage from car pollutants is very small. There are a number of places that one may experience solitude and natural beauty regardless of road closure because so much of this area is roadless. Motorized use of this area will have insignificant affect because of the terrain and private land. Most travel will be on existing roads. With the vegetation and geology screening affect, noise from motorized use will have little impact on the solitude opportunities of the area.

Motorized use in this area may increase, but given the topography of the area, this use will not expand from the existing or designated trails. Emissions from increased traffic on these trails is too far from sensitive plants to be of any harm.

5. Actions taken during implementation of the decisions will be considered and coordinated with the public through implementation plans for each ACEC.

6. See response #5.

PREFERENCES

1. Meeteetse Spires is home to two highly sensitive plant species, Shoshonea pulvinata and Townsendia spathulata. Shoshonea is found in only 12 locations globally. It is considered a sensitive species by the BLM and the USFS. The rarity of its occurrence merits the most stringent protection available for the entire 960 acres.

2. In Meeteetse Spires, the recommended "special management" under the preferred alternative C allows motorized use within unidentified roads and trails. This management would be insensitive to spectacular scenery, natural beauty, and ecological habitat values and conflicts with their appreciation and protection. A total closure to off-road vehicles has these benefits listed at p. 33; benefits by the way which the preferred alternative C would forego:

   "Closing off-road vehicle use would lessen erosion in the area, benefit cultural resources, vegetation for livestock and wildlife and water quality."

3. On Meeteetse Spires we encourage limiting off-road vehicle use to designated roads only. Limiting off-road vehicle use will facilitate the conservation Shoshonea pulvinata, one of the main reasons for nominating Meeteetse Spires for ACEC designation.

4. We recommend that a management prescription (no motorized use) be adopted for the Preserve/ACEC.

Stark Site

COMMENTS

1. The Stark Site is located in high plains and few woodlands, and is known as a very significant cultural site, it seems inappropriate to allow wood product sales into the area which would improve access and facilitate disturbance of the cultural site.

2. In the Stark Site, we would like to be able to maintain over a mile of boundary fence between us and the other permittee using a vehicle. Such use would probably involve a day or two a year. Over the past several years we have created no noticeable ruts, tracks or trails but the hunters and artifact collectors certainly have created undesirable trails in the area and this should not be encouraged.

RESPONSES

1. See Chapter 2, Alternative C, under "Stark Site" for change in decision.

2. As defined in the Glossary, fence maintenance would be allowed with prior authorization.

Weatherman Draw

COMMENTS

1. It is very important for BLM to keep in mind that the oil and gas leases in Weatherman Draw were originally issued without surface stipulations which would preclude the company from ingress and egress into the leased lands in an effort to conduct its oil and gas exploration operations.

2. Weatherman Draw will need to be managed properly to insure valid existing rights. Anschutz does plan to drill a test oil well in the spring of 1998 and will be responsive to the needs of the BLM as long as we are

not economically paralyzed due to the reclassification of Weatherman Draw.

3. Based on the known occurrence of vandalism at Weatherman Draw and Petroglyph Canyon, we believe that an increased law enforcement presence should be included in any management plan for these areas. This is particularly important should any preexisting valid rights be found which would increase access in some circumstances.

4. In Weatherman Draw, the extent and location of the proposed authorized off-road vehicle use under Alternative C is not identified or analyzed in the EA - a major deficiency. This oversight needs correction prior to issuing a final decision on the ACEC "special management' for Weatherman Draw.

RESPONSES

1. When these leases were issued, the BLM was not aware of all of the cultural resources in that area, and the leases were issued with the former Standard Stipulations applying to resource protection. Valid existing rights will be honored. Terms and conditions for existing oil and gas leases (valid existing rights) cannot be changed until the current leases expire.

2. See response #1.

3. BLM will increase the law enforcement presence here to the extent it is feasible under our current funding. A Cultural Resource Protection/Implementation Plan will include increased monitoring for vandalism, perhaps with the aid of local volunteers.

4. BLM proposes to allow off-road vehicle travel with authorized use. This is to accommodate valid existing rights in the area. Prior to such use, the action would have to approved by the Billings Field Office manager. The objective would be to protect the area while allowing for valid existing rights.

POWDER RIVER RMP AREA

Finger Buttes

COMMENTS

1. The Resource Advisory Councils have been omitted from the preplanning stages of the ACEC in general. These committees received the booklet in January 1998 also. This is called selective participation when you receive information from biased observationalists.

2. I feel we as landowners are being kept in the dark about something. The reason I feel this way is because the Finger Buttes area was nominated in 1992 and the BLM has been working on it since 1995. Why then, were the people involved just informed three months ago.

3. In the Finger Buttes proposed ACEC, the future of our grazing will be in jeopardy. This feeling comes from the fact that one person who nominated the area for ACEC and it got this far with no knowledge of the landowners. If someone in the future proposed that cattle should not be in an ACEC, I'm afraid that the lessee's hand will be tied.

4. It is my fear as well as my neighbors that if this area is designated ACEC under Alternative C, in a few years some group will want it changed into Alternative B and we landowners will lose everything we have put into it over the past 70 years.

5. If the BLM can come in and designate these areas on one persons nomination, in spite of total adversity from the landowners who live here, and in Carter County, what's next? Is our deeded land in jeopardy if someone in the Sierra Club or BLM organization decides to nominate it?

6. What guarantee do we have that in a few years the government won't decide to take the privately owned land that lays in the Finger Buttes area and make a park out of it.

7. If the Finger Buttes area is designated an ACEC, then it could always get worse (Alternative B in the future). Predator problems would get out of control without continued extensive management. Many of the neighboring landowners are sheep producers and could probably not stay in business if that should ever happen.

8. The future objectives of these proposals is unclear. As far back as any of these ranches have been in business, we have accomplished the Finger Buttes ACEC goals to preserve this land. Why fix what is not broken?

9. This proposal does suggest a change in activities which in turn would alter management practices. It appears the current management practices are preserving this area, why threaten this? Once again, we see too many unanswered questions that need honest and direct answers.

10. The BLM has control of the BLM ground in the proposed Finger Buttes ACEC. Why does BLM need more control? The BLM or government has almost all

of the mineral rights in the proposed area, so that should not be a concern to BLM.

11. Can BLM manage the proposed Finger Butte ACEC better than private land owners surrounding the area? Most likely if the area is designated an ACEC it will draw additional people to the area creating more risk of vandalism, plant disturbance, soil erosion, etc. If the real intent is to protect the area, then BLM must consider the facts.

12. The only place that meets the skylined sandstone pinnacles is on a school section (picture on front of ACEC book). The rest of the fingered area that is BLM is big topped sandstone rocks common throughout Carter County. Most of the BLM in the proposed area is black gumbo ridges.

13. Possibly, the Finger Buttes themselves are unique, however, they do not meet any of the other criteria. Also, the main part of the Fingers (picture on the front of the ACEC book) is on State land (a school section) and so is not part of BLM ground anyway. The rest of the BLM land in the surrounding area that is proposed for this ACEC does not fit any of the criteria for designation.

14. The map on page 91 is not correct. Before publishing this draft and making it pubic all facts and figures should be faultless.

15. The Finger Buttes area has no public access at present which is not portrayed on the map on page 91.

16. I would ask that you exclude the deeded portions of Sections 1, 2, and 12 T. 6 S., R 60 E., as that was my uncle, William Thomas' homestead. Also our deeded portion of Sections 28, 29, 32, and 33 T5S R60E. We own not only the surface rights, but also the mineral rights in these areas.

17. The maps in the ACEC booklet are misleading as they do not show where the privately owned land and the federal land is located or where the Finger Buttes area actually is.

18. The map on page 91 appears to be all BLM lands, when in fact there is privately owned land and minerals within this boundary.

19. The BLM land does not meet the criteria to be considered ACEC. The biggest share of the unusual rock formations are either on state land or privately owned land. The balance of the area you have mapped out is just draws and gumbo ridges which are not at all unusual scenic formations in southeastern Montana. Therefore it does not meet the criteria of scenic value or have significant qualities.

20. Page 64 states the relevance that the Finger Buttes meets is criteria 1 and 2. The CCS and CGA does not feel that the Finger Buttes meet the visual aspect that is referred to in the draft due to the pinnacles, the sandstone monuments, towers and prominences are on State and private land. Therefore, these should not be considered parts of the ACEC.

21. I am not clear how one area (Finger Buttes) can be nominated for ACEC, and by the time the BLM has completed the evaluation, the area is much larger than what was nominated, bringing in a lot of surrounding area.

22. Much of this land in the Finger Buttes area has been in the families for generations. This proposal could have quite an impact on going to old homesteads etc if they decide at a later date to stop off-road vehicles. This may not happen, but it certainly would not if it were an ACEC.

23. Under the Importance category Number 1, the Finger Buttes area is not more than locally significant because it is an area like Long Pines, Chalk Buttes or Ekalaka Hills. Under the Importance category Number 2, the reason it is fragile and vulnerable is because it is sandstone and wind and rain are always going to take their toll with erosion. Making it an ACEC will not stop that.

24. Alternative C is what is being proposed for the Finger Buttes ACEC. This alternative will supposedly make no changes. What then, is the point of wasting all this time and money to pass this proposal? If nothing is going to change, why not leave things as they are already. I believe that this can only mean that there is more change for us scheduled by the BLM in the future.

25. BLM has not brought forth any evidence that additional management practices are necessary to protect the designated areas. In fact, if additional management is necessary and congress agrees, additional funding could be made available.

26. The change of management practices should be included in this draft of the concern, not after the comment period is over and then included in the final draft.

27. The draft states changing the activities to change to the ACEC will not effect management practices, how do you change activities and not change management

28. In Alternative B, page 40 in your booklet, you say it would take 27 miles of fence to fence it in. According to the map on page 91, it is at least 40 miles around the proposed Finger Buttes ACEC. In that case, you must figure on the landowners to fence in the rest which would, according to your figures of $5000 per mile of fence be an added expense of $65000 for the landowners to bear, plus another $5777 annually for maintenance.

29. According to the ACEC book, 27 miles of fence would be needed to fence out the proposed Finger Buttes ACEC. This means they would fence out the outside of the whole proposed area. If they were going to just fence out the BLM, the fence would be considerably longer. They must have figured they were either going to take it all, or the landowner would be responsible for fencing out their own land. This would cause terrible financial strain and in many cases would not even be feasible. Many of the pastures involved are huge and only a part are involved in the ACEC area. Many of the ranchers under these tough times could not absorb these extra costs.

30. Consideration hasn't been made towards what will happen if the Finger Buttes area is designated. The past 80-100 years the land has been maintained as is. With the influx of people the possibility of increased degradation could occur, allowing this area to be downgraded.

31. The impact this (Finger Buttes ACEC proposal) will have on the area is significant. The public will have access to the maps, etc which is very misleading because of all of the deeded land in amongst this proposal. There is no legal access for people to get in, but I think that there will always people trying to follow all the supposed roads that are on the BLM maps. This will cause numerous problems for all people involved.

32. If the Finger Buttes area is designated ACEC, the BLM will show this area on their maps. How are we as landowners going to keep the public from leaving gates open, harassing livestock, and trespassing on our private property getting to the Finger Butte area?

33. In the Finger Buttes proposed ACEC there probably won't be an immediate impact, but if BLM can get some land traded or bought to get access, there will be.

34. The Finger Buttes are made of sandstone and would not tolerate climbing from tourists and/or heavy public use. We have concerns over the public use and access at this time; but would be willing to work with BLM on certain options.

35. In the Finger Buttes area, there will be traffic on our sensitive and half wore out Carter County roads and people getting lost and snake bit as they walk around sight-seeing.

36. There is no legal access into portions of the area administrated by BLM. How is this in the public interest without accessibility? Trespassing puts the burden on local government not BLM.

37. The mere designation of the Finger Buttes area hasn't considered the local impact on the local economy of this area.

38. An issue that hasn't been considered is the heritage values of this area.

39. The land prices in the Finger Buttes area would be affected tremendously. I don't feel anyone would want to have something that any given time may be taken away. There may be some law somewhere that says if it is an ACEC, our rights of eminent domain no longer apply.

40. Some clarification on the ACEC language needs to be done if this is going to go through. For example, the fire suppression needs to be worded so people in the surrounding area can protect their holdings without worrying about damaging the scenic value of the Finger Buttes.

41. Fencing the Finger Buttes would be detrimental to the wildlife because they use our hay meadow and grain fields as a source of food. It would be another fence for the wildlife to get caught in and killed. It would also chop pasture size for the farmer and rancher.

42. The oil and gas leasing and development restrictions are far too loose in the Finger Buttes area. Since this is one of the most scenic and environmentally sensitive areas is southeastern Montana, a NSO or no lease designation would be more appropriate. Full field development in Finger Buttes or even a few wells would result in many of the values for which the ACEC was created being destroyed or severely compromised.

43. On page 8 it states 6,206 public surface acres and then further says 10,553 public mineral acres on all three alternatives. Each one of these is incorrectly stated. There is private mineral rights and private surface rights included in these acreages. Therefore, there is misrepresentation of these facts. The private mineral rights and the private surface rights should not be included in the designated ACEC.

RESPONSES

1. The Resource Advisory Council first learned of the project in 1995, during their meeting in Miles City. Also in 1995, the BLM began scoping for the project and announced it to the public through the Federal Register and provided news releases to local newspapers. In 1996, BLM completed the evaluation of each of the areas for ACEC designation. In 1997, the RAC and county commissioners were provided preliminary copies. Availability of the published document was announced in the Federal Register in December 1997, and local newspapers, asking for public comment on BLM's proposals.

   The public participation process continues with the public having the opportunity to protest the proposed decisions to the Director of BLM (see Dear Reader letter at front of book).

2. See response #1.

3. BLM does propose adopting Alternative B for some management, such as closing mineral material sales in the Finger Buttes area. Livestock grazing is proposed to continue (same as Alternative A). Once approved in the Decision Record, no changes can be made to decisions in the plan unless another planning effort (another amendment) is completed. Such an amendment would include public participation. (Also, see response #1.)

4. See response #3.

5. See response #3.

6. ACEC designations can be made on public surface lands only.

7. Predator control is not covered in the amendment, and so is managed according to the Powder River Resource Management Plan (it's allowed and no change is proposed).

8. According to the FLPMA, BLM must give priority to the designation of ACECs. The Finger Buttes area was nominated by members of the public. After nomination, the area and other nominated areas entered into a process provided to the government in 43 CFR 1613. That process describes how if an area is relevant and important and requires special management, it qualifies for ACEC designation.

   The area is receiving insufficient protection per the management described in the Powder River Resource Area Management Plan (see Alternative A of this document.) Impacts from managing the area under current management are described in Chapter 4, Alternative A, under "Finger Buttes." In order for BLM to change the management of the area (existing management, Alternative A) it must amend the land use plan and go through the planning process.

   We agree that the area has been well-treated by private landowners. We must help with that management by not allowing federal authorization of actions that would degrade the Finger Buttes' scenic values.

   There would be impacts from making the area an ACEC (see Chapter 4, Alternative C, "Finger Buttes" for additional text describing impacts). These impacts would be minimal as compared to those described under existing management (Alternative A).

9. See response #8.

10. See response #8.

11. See response #8.

12. The area recommended ACEC has now been reduced to 1,520 public surface acres, an area containing the greatest concentration of pinnacles (see text changes in Chapters 2 and 4). The photo on the cover has been changed to include an area that is all BLM-administered.

13. See response #12.

14. See response #12.

15. See response #12.

16. See response #12.

17. See response #12.

18. See response #12.

19. See response #12.

20. See response #12.

21. After the area was nominated, BLM evaluated it with the relevance and importance criteria. In doing so, BLM specialists determined that the ACEC values existed beyond the area nominated and adjusted the boundary line for what would be recommended ACEC.

22. See response #12. Which roads and trails remain open would be identified in an implementation plan with input from the public.

23. We agree that the areas you mention are special and would consider them for ACEC designation. However, BLM can only consider designation for areas with BLM-administered surface. These areas do not contain BLM-administered surface. Finger Buttes is more than locally significant because of the reasons listed in Appendix 1, such as the area being fragile and irreplaceable.

24. Alternative C is the BLM's preferred alternative and may include portions of alternatives A or B. Where Alternative C is different from Alternative A (existing management), BLM is proposing a change to how the area is managed.

25. See response #24.

26. See response #24.

27. You may be referring to livestock grazing management practices. Some activities would change, such as mineral development, but livestock grazing management practices are not proposed to change.

28. See text change in Alternative B as a result of new area analyzed and proposed. The 10 mile figure now under Alternative B represents adding onto and tieing into existing fences or using some of the Finger Buttes as natural boundaries. The BLM would pay for the fence construction. The rancher would be responsible for maintenance of the existing allotment fences.

29. See response #28.

30. A general assumption is made that visitor use near large population areas, such as Billings, will see an increase in visitors. See changes in chapters 2 and 4 for 1,520 acre area recommended for Finger Buttes. There is no legal access into this area and BLM does not anticipate a major influx of people.

31. See response #30.

32. See response #30.

33. In the future, with mutual agreement of the exchange partners, lands proposed to be acquired would be analyzed in an environmental document with public input.

34. An implementation plan for the area will be written after the decisions are approved (a Decision Record is signed). The implementation plan will try to minimize the impacts. BLM will encourage the public to participate in the development of that plan. There is no legal access into the area.

35. See response #34.

36. Public access is not one of the criteria used to determine if an area merits ACEC designation. (See Appendix 1 for the list and explanation of relevance and importance criteria.)

37. See change in acres for area recommended. See Chapter 4 under "Finger Buttes" and Appendix 4 for discussions on economic impacts. The primary economic impacts under Alternative B would be the loss of livestock grazing and potential loss of oil and gas activity. The loss of 181 AUMs represents a small percentage of the estimated 53,000 head of cattle in Carter County in 1997. The potential loss of future oil and gas activity could also result in some lost tax revenue. The area currently has no oil and gas leases.

38. The response to this comment is found under the "All Areas," "Responses" section, #7 at the beginning of this chapter.

39. ACECs must be managed according to the land use plans. Any proposed decision change outside the scope of the land use plan would initiate another land use planning process (amendment) that would include public participation. Also, see Chapter 2 for changes in area recommended for designation.

40. See text changes to "conditional fire suppression" definition in the Glossary.

41. New fence construction would comply with BLM Manual 1741 (Handbook H-1741-1). Specific total height and wire spacing requirements would allow for the passage of big game animals.

42. See change in the preferred alternative (Alternative C) in chapter 2 and analyses in Chapter 4 "Finger Buttes," where this area is proposed and analyzed for oil and gas leasing allowed with a No Surface Occupancy stipulation.

43. ACECs can be designated on public surface only. No private surface or any minerals can be designated ACEC. See also acreage changes to the area BLM is considering and proposing for ACEC designation ("Finger Buttes," Chapter 2.)

PREFERENCES

1. If Finger Buttes falls under the ACEC proposal, it complicates any land trades.

2. In the Finger Buttes ACEC, there is a potential to reduce grazing numbers, hurting the income of the

ranch. Anyone interested in making land less valuable to a landowner should be forced to pay the difference in income loss.

3. The grazing fees and numbers haven't been decided for this year. I am afraid if the Finger Buttes proposal goes through, the people in the proposed area will be under different grazing and fee laws than the rest of the landowners in the county.

4. The farmer and rancher need to be assured of grazing rights on the land for an extended period of time.

5. We object to the conditional fire suppression primarily because of the intermingling of private and federal lands.

6. Grazing has historical value in this area, therefore this value should be as pertinent as the scenic value and maintained as previously operated.

7. The Finger Buttes area is important for Carter County not just for its economic value, but for the cultural and historic purpose. We realize it may be a hidden treasure to you, but is an area that the producers have treasured for generations and will continue to do so. Understand the citizens of this county when they are reluctant to just hand it over.

8. In the Finger Buttes area, the taxes will be cut down if the cattle numbers go down if alternative B ever goes into effect.

SOUTH DAKOTA RMP AREA

Fossil Cycad

COMMENTS

1. I have personally scoured the Fossil Cycad area and so have many others that we have personally visited with. There just isn't anything left.

2. The plan failed to address fossil collecting in the Fossil Cycad area. Since Cycads are plant fossils, without special restrictions being placed on the area, the BLM would not be able to control fossil collecting. Fossil collecting is the reason why the area was deauthorized as a national monument. In fact, many people thought that the Cycads had been completely depleted from the area until U.S. Highway 18 was rerouted through the area and cycads were uncovered during highway construction. In order to protect the area, perhaps placement of signs that announce restrictions on fossil collection and a BLM number to call to report suspicious activity would be a deterrent.

3. In the Fossil Cycad area, a restriction on new rights-of-way needs to be enacted. South Dakota is currently considering the construction of the Heartlands Expressway, which will link Denver with Rapid City. The Fossil Cycad area could potentially be along one of the proposed routes since there is interest in having it go though Hot Springs and Edgemont. The Expressway would have heavy impacts on the Cycad area and fossil resource.

RESPONSES

1. While the cycads exposed on the surface and road cut have been removed, fossils do exist buried in the same geologic strata within the ACEC. Important paleontological information could be obtained from this location, including the paleoenvironment at the time of the cycads, and other plants and animals living at this time. Preservation of this quality and number of cycads points to unique conditions at time of fossilization. Designation of this area as an ACEC will provide more protection than was accorded this unique area in the past.

2. See Chapter 2 for text changes discussing fossil collecting and alternatives analyzed. Signing will be discussed in the Implementation Plan for the area.

3. See decision change in Chapter 2 where BLM proposes the area to be closed to rights-of-way.

DISTRIBUTION LIST

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APPENDIX 1

ACEC NOMINATIONS

INTRODUCTION

This appendix provides an assessment of the areas nominated for ACEC designation (see table 3). A total of 21 nominations were evaluated to determine if they met relevance and importance criteria described below.

EVALUATION PROCESS

In order to be designated an ACEC, the area must meet both the relevance and importance criteria as defined in 43 CFR 1610.7-2.

Relevance. An area meets the relevance criteria if it contains one or more of the following.

1. Significant historic, cultural or scenic values including rare or sensitive archaeological resources and religious or cultural resources important to the Native Americans.

2. Fish and wildlife resources including habitat for endangered, sensitive or threatened species, or habitat essential for maintaining species diversity.

3. Natural process or systems including endangered, sensitive, or threatened, plant species; rare, endemic or or relic plants or plant communities which are terrestrial, aquatic, or riparian, or rare geologic features.

4. Natural hazards including avalanche, dangerous flooding, landslides, unstable soils, seismic activity, or dangerous cliffs.

Importance. The value, resource, system, process, or hazard described above must have substantial significance and values characterized by one or more of the following.

1. More than locally significant qualities.

2. Qualities of circumstances that make it fragile, sensitive, rare, irreplaceable, unique, endangered, threatened, or vulnerable to adverse change.

3. Recognized as warranting protection to satisfy national priority concerns or to carry out the mandates of the Federal Land Policy and Management Act.

4. Qualities which warrant highlighting to satisfy public or management concerns about safety and public welfare.

5. Poses a significant threat to human life or safety or to property.

An interdisciplinary team evaluates each area to determine if it meets both the relevance and importance criteria. Evidence of relevance and importance may be gathered from BLM or other sources.

If an area does not meet the criteria, or special management attention is not needed, analysis supporting the conclusion is incorporated into the amendment and the area is not considered a potential ACEC.

TABLE 4
AREA OF CRITICAL ENVIRONMENTAL CONCERN NOMINATIONS

Name	Reason	Public Acres	Relevance	Importance	Need Special Management Attention
BILLINGS RMP AREA					
Bridger Fossil	Paleontology	575	Yes	Yes	Yes
Castle Butte	Cultural Resources	185	Yes	Yes	Yes
Meeteetse Spires	Vegetation, Scenery	960	Yes	Yes	Yes
Petroglyph Canyon	Cultural Resources	240	Yes	Yes	Yes
Gyp Spring	Vegetation, Wildlife	160	Yes	No	No
Pryor Mountain Limestone Cuestas	Geology	2,700	No	No	No
Crooked Creek Karst	Geology	320	No	No	No
Red Valley	Geology	1,280	No	No	No
East Pryor Mountains	Wild Horses, Wildlife, Paleontology	29,500	Yes	Yes	Yes
Remaining Pryor Mountains Area	Scenery, Geology, Vegetation, Wildlife, Cultural	50,500	No	No	No
Red Dome	Scenery, Geology	3,500	No	Yes	No
Stark Site	Cultural Resources	800	Yes	Yes	Yes
Weatherman Draw	Cultural Resources	4,268	Yes	Yes	Yes
POWDER RIVER RMP AREA					
Alzada Oaks	Vegetation	40	Yes	No	No
Battle Butte	Cultural Resources	120	Yes	Yes	Yes
Deadhorse Badlands	Scenery, Size, Naturalness	35,000	No	No	No
Finger Buttes	Scenery	1,520	Yes	Yes	Yes
Howrey Island	Vegetation	321	Yes	Yes	Yes
Matthews Wildlife and Recreation Area	Wildlife, Vegetation	75	Yes	No	Yes
Reynolds Battlefield	Cultural Resources	336	Yes	Yes	Yes
SOUTH DAKOTA RMP AREA					
Fossil Cycad	Paleontology	320	Yes	Yes	Yes

NOMINATIONS

BILLINGS RMP AREA

BRIDGER FOSSIL AREA: Nominated for paleontology values.

Relevance Criteria: This area meets relevance criterion 3 as a natural process or system. Exposures of the Late Jurassic Morrison and Early Cretaceous Cloverly Formations in this area have yielded fossils of rare dinosaur taxa. While fossil localities dating to this time period exist elsewhere, the quality, concentration and kinds of fossils present on public lands in the Bridger Fossil area can provide an outstanding record of the environment and a glimpse of terrestrial life during those periods.

In addition, the area includes the most fossiliferous exposures of the Cloverly Formation in northern Wyoming and southern Montana. Deinonychus, and Tenontosaurus, rare dinosaur species, have been documented here, as well as an extremely rare concentration of dinosaur egg and embryonic remains. These and other significant fossil localities have prompted ongoing professional exploration here for dinosaur remains. Systematic inventory of the area may yield additional important discoveries from this time period.

Importance Criteria: This area meets importance criteria 1 and 2. Specimens of rare dinosaur species and dinosaur egg and embryonic materials may hold the answer to central questions in dinosaur research, regarding dinosaur physiology and behavior and whether or not dinosaurs were warm- or cold-blooded. The Bridger Fossil area continues to yield information significant to the scientific community in the U.S. as well as worldwide.

Fossil deposits here are fragile and vulnerable to erosion. Once exposed to weathering, fossil bone quickly loses its integrity and its information potential.

Summary: The Bridger Fossil area meets the relevance and importance criteria. This area is 575 public surface acres in size and located within T. 7 S., R. 24 E. (see map 2). This area is significant because of its potential to yield information on dinosaurs during the Late Jurassic and Early Cretaceous Periods. This area is recommended for ACEC designation.

Sale of rare and well-preserved dinosaur remains on the black market can be extremely lucrative and is a growing problem world-wide. Published professional investigations in the area have been available for several years, making the remains susceptible to illicit collection for profit by collectors. Special management attention is needed to protect the area. BLM management objectives should involve conservation for future scientific study of the fossil localities in the area. Study of the localities by qualified institutions is encouraged to minimize the loss of potentially important information through natural and human causes.

Portions of this area were also nominated for scenic values. See "Red Dome" discussion below.

CASTLE BUTTE SITE COMPLEX: Nominated for unique cultural values.

Relevance Criteria: This area meets relevance criterion 1. Castle Butte is significant for its potential to provide information on Native American cultures of the Northwestern Plains during the Late Prehistoric and Historic time periods. Research indicates that variations in style can indicate the ethnic identity of the artists as well as the date of execution. Association of rock art motifs on the butte with specific ethnic groups still present in the region suggests it may be considered a significant site to contemporary Native Americans in addition to its research value.

Because of their excellent preservation as well as the large numbers of individual rock art panels, Castle Butte will continue to be important in investigations into the ethnohistory of the Plains. Information on ethnic affiliation and dates for the art can provide significant contributions to our understanding of prehistoric and early historic population movements on the Northwestern Plains. Through motif analysis and with evolving theories of rock art origins and function among traditional cultures, the Castle Butte rock art site may hold important keys to understanding Native American social systems and values prior to and during historic disruptions.

Importance Criteria: This area meets importance criteria 1 and 2. It possesses information that is regionally significant and fragile. The area is vulnerable to erosion and vandalism.

Castle Butte is one of the premier rock art sites of the Northwestern Plains. Information from the site has been used by a number of prominent rock art investigators in constructing and debating an understanding of the sequence of regional rock art styles in use on the Northwestern Plains and elsewhere on the High Plains from Alberta to Texas, particularly for the early historic period. The quality, quantity and concentration of rock art, as well as the potential for relative and absolute dating, make this site more than locally significant.

With some exceptions, rock art at Castle Butte has not been vandalized; erosion is the biggest threat to its integrity. However, judging by modern graffiti, the site is well known locally. Information on the site has been widely published in professional journals and monographs. The location is easily accessible and remote. Vandals or collectors could destroy an irreplaceable and fragile resource.

Summary: The area meets the relevance and importance criteria. This cultural complex consists of two sites: 24YL418, an extensive rock art site, and 24YL760, a buried occupation site. The Castle Butte Site Complex is 185 public surface acres in size and is located within T. 5 N., R. 30 E. (see map 2). Each of the two sites is considered eligible for nomination to the National Register of Historic Places. The sites are fragile and vulnerable to damage by natural or human actions. The area has potential to provide information on the ethnohistory of Native Americans of the North American Plains and is recommended for ACEC designation.

BLM management objectives should involve the long-term conservation of this exceptional rock art site for future generations to study and enjoy.

MEETEETSE SPIRES: Nominated for unique vegetation and scenic values.

Relevance Criteria: This area meets relevance criteria 1, 3 and 4. Meeteetse Spires has significant scenic value (spire remnants of the upturned Madison limestone), a rare plant species (*Shoshonea pulvinata*), and dangerous cliffs.

Importance Criteria: This area meets importance criteria 1 and 5. The rare plant species gives the area special worth and the steep cliffs pose a hazard to the recreating public.

Summary: This area meets the relevance and importance criteria. Meeteetse Spires is located on the eastern slopes of the Beartooth Mountains, approximately five miles south of Red Lodge. The area is 960 public surface acres in size and located within T. 8 S., R. 20 E., sections 23, 26 and 35 (see map 3). This scenic area is considered significant for a rare plant specie, Shoshonea pulvinata, which is known in three locations in Montana and only 12 world-wide. Meeteetse Spires meets the relevance and importance criteria and is recommended for ACEC designation.

BLM management objectives should include measures to warn the public about the dangerous cliffs, protection and enhancement of the rare plants, and the long-term conservation and recreational use of this scenic area for future generations to enjoy.

THE PRYOR MOUNTAINS AREA: Nominated for scenic, wildlife, cultural, vegetation and geology.

When this approximately 80,000 public surface acre area was evaluated, only portions of the area met both relevance and importance criteria. The nomination listed specific areas within the Pryor Mountains with rationale for why the area met relevance and importance criteria. Each specific area is evaluated below with BLM's recommendations (see map 1) .

Petroglyph Canyon: Nominated for unique cultural values.

Relevance Criteria: This area meets relevance criterion 1 as a significant cultural property. Petroglyph Canyon is significant because of the area's information potential on cultures of the Northwestern Plains. It is also important to contemporary Native Americans.

Importance Criteria: This area meets importance criteria 1 and 2. It possesses information that is regionally significant and fragile. The area is vulnerable to erosion and vandalism.

Summary: The area meets the relevance and importance criteria. Petroglyph Canyon contains 24CB601, a rock art site representing the northernmost extension of an art style not commonly found in Montana. The area is 240 public surface acres in size and located within T. 9 S., R. 26 E. (see map 2). The site is listed on the National Register of Historic Places. It is considered significant for its information potential on the prehistory and history of the Native American in the plains environment and is recommended for ACEC designation.

BLM management objectives should involve the long-term conservation of this site for future generations to study and enjoy.

Gyp Spring: Nominated for sensitive plants and animals.

Relevance: This area meets relevance criterion 2 for providing habitat for an endangered species, the spotted bat. Although they do not reside there, the spring is a water source for bats.

Importance: This area does not meet any of the importance criteria. It is not more than locally significant; other springs are found locally and regionally. Plants in this area are important locally, but not regionally, as they are commonly found in other areas and states.

Summary: This 160 public surface acre area located in T. 9 S., R. 27 E., section 33 is currently withdrawn for a public water reservation (see map 1). A spotted bat was once captured near the spring. The area meets one of the relevance criteria, but none of the importance criteria. It is not recommended for ACEC designation.

Current BLM management in the area includes fall and winter grazing only. BLM plans to fence the area to exclude livestock grazing.

Pryor Mountain Limestone Cuesta, Crooked Creek Karst Area and Red Valley: Nominated for significant geologic processes.

Relevance: These areas do not meet any of the relevance criteria. The geology in these areas is not significant nor rare.

Importance: These areas do not meet any of the importance criteria. The geology in these areas is not regionally significant, nor rare. These areas do not warrant protection to satisfy a national concern, or highlighting because of safety concerns.

Summary: The 1,280 acre Red Valley area is located on public lands in T. 9 S., R. 27 E., sections 21 and 28. The 2,700 acre Limestone Cuesta area is located on BLM-administered lands within T. 7 S., R. 25 E., sections 27 through 29, 32 through 34, and T. 8 S., R. 25 E., sections 3 and 4. The Crooked Creek Karst Canyon is located on public lands in T. 9 S., R. 27 E., sections 2 and 3 (see map 1). All of these areas have interesting geology as do the surrounding area. Red Valley, Crooked Creek Karst Canyon and Limestone Cuesta do not meet the relevance or importance criteria and are not recommended for ACEC designation.

These areas have been nominated for National Natural Landmark status by the National Park Service, but have never been designated. The National Park Service gathers all available information at a site to determine if it qualifies for National Natural Landmark status, notifies the public that the site appears to qualify for designation in the Federal Register and requests comments. The information has been gathered for these areas, but the National Park Service has not posted a Federal Register notice recommending National Natural Landmark status.
The Crooked Creek Karst area lies within the Burnt Timber Canyon Wilderness Study Area. See the "East Pryor Mountains" evaluation below.

East Pryor Mountains: Nominated for scenic, geologic, vegetation, wild horses, wildlife, cultural and paleontologic values.

Relevance Criteria: This area meets relevance criteria 1, 2, and 3. The Pryor Mountain Wild Horse Range is the first established in the nation and predates the Wild Horse and Burro Act. The area contains caves that provide summer and winter habitat for bats. The cave ecosystems are fragile, complex environments that can become easily disrupted. These caves are also natural hazards, requiring special rules for public access and use.

Lands in the southern end of the Pryor Mountain Wild Horse Range, along the lower portion of Crooked Creek, meet relevance criterion 3 as a notable example of a natural process or system. This area is outstanding for its potential to yield information on historical geology and paleontology. The fossil-bearing Cretaceous deposits are the type-site for eight species and three genera of early Cretaceous dinosaurs.

Importance Criteria: This area meets all of the importance criteria. The horse range is unique to Montana and recognized nationally. Numerous caves in this area are considered fragile, irreplaceable and vulnerable to adverse change. Although the cave resources are not unique nor rare, protection is a national priority concern as evidenced by the 1988 Cave Resources Protection Act. With the increase of visitation to the East Pryor Mountains, it is expected that cave visitation will also increase. The area warrants highlighting in order to satisfy public safety concerns. There is potential for an increase in injury due to the increased visitation.

The southern portion of the East Pryor Mountains at Crooked Creek area meets importance criteria 1 and 2. The resource is more than locally significant. It is fragile, sensitive, rare, irreplaceable, unique, and vulnerable to adverse change. The research potential for this area remains high.

Summary: The wild horses, wildlife and paleontology values meet the relevance and importance criteria. The East Pryor Mountain area is approximately 29,500 public surface acres in size and located within Montana T. 9 S., R. 27 E.; T. 8 and 9 S., R. 28 E.; and Wyoming T. 58 N., R. 95 W., (see map 1). It includes the Pryor Mountain Wild Horse Range; the Burnt Timber Canyon, Pryor Mountain and Big Horn Tack-On wilderness study areas; and the Crooked Creek NNL. The area has more than locally important resource values. They require special management attention and caves in the area pose a risk to the recreating public. The significant paleontological values of this area should be preserved. The area is important nationally and recommended for ACEC designation.

Along with the Wild Horse Management Plan and Amendment (BLM, 1995) BLM management objectives should involve the long-term conservation and recreational use of this area for the public to enjoy. The potential for mineral development in the area is low, but management should consider closing the area to mineral entry. A recreation plan is needed to manage increasing public use. Important fish and wildlife species should be protected and their habitat enhanced, and visitors to the area should be warned about potential dangers.

BLM management objectives should be directed toward conservation of the Crooked Creek paleontological resource for future scientific study. Study of the fossil localities by qualified institutions would be encouraged to minimize the loss of potentially important information through natural and human causes.

The Remaining Area: Nominated for scenic, geologic, vegetation, wildlife, and cultural values.

This approximately 50,500 public surface acre area did not meet the relevance and importance criteria. The significance of cultural resource sites in this area is unknown. The plant and animal species are not more than locally significant. The scenery and geology of the area is replicated locally and regionally; it is not rare. As this area does not meet the relevance and importance criteria, it is not recommended for ACEC designation (see map 1).

RED DOME: Nominated for geology and scenic values.
Relevance Criteria: The area did not meet any of the relevance criteria. The scenery in this area is not significant nor unique to the region. Similar scenery exists locally as well as being common regionally.

Importance Criteria: Red Dome meets importance criterion 2. The Red Dome area is exemplary of a faulted dome.

Summary: Red Dome is 3,500 public surface acres in T. 7 S., R. 24 E., sections 8, 9, 16 through 21, and 28 through 30 (see map 8). Red Dome meets only one of the importance criteria, but none of the relevance criteria. It is not recommended for ACEC designation.

A portion of this area has been nominated for National Natural Landmark status by the National Park Service, but has never been designated. The National Park Service gathers all available information at a site to determine if it qualifies for National Natural Landmark status, notifies the public that the site appears to qualify for designation in the Federal Register and requests comments. The information has been gathered for this area, but the National Park Service has not posted a Federal Register notice recommending National Natural Landmark status.

This area is also part of a nomination for paleontology values. Portions of the area, and an additional area meet the relevance and importance criteria (see "Bridger Fossil" discussion above).

STARK SITE COMPLEX: Nominated for unique cultural values.

Relevance Criteria: This area meets relevance criterion 1 as a significant cultural property. The Stark Site Complex has the potential to yield significant information on Native American societies of the Northwestern Plains from the Plains Archaic period to the early Historic period.

The complex of sites in the area includes evidence for the repeated impoundment, slaughter, and processing of bison over a long period of time. Included are seven separate bison bone deposits, each representing a kill and processing episode; a number of open occupation sites with artifacts, hearth features and buried deposits; and a small rock shelter with rock art and with the potential for buried occupation deposits. At least two human burials have been removed from the area.

When originally recorded in 1972, one of the bison kill and processing sites yielded ceramic sherds similar to types found in late prehistoric contexts on the Missouri River in North Dakota. Limited excavation was subsequently conducted by Montana State University. A final report on the work has not yet been prepared, but the presence of this rare (for central Montana) and exotic artifact type suggests that these people may have been among the earliest Crow to move into the area after splitting off from North Dakota agricultural groups. The timing and other factors critical to an understanding of the initial movement of the Crow people to the Montana-Wyoming area is problematical and has generated considerable research interest. The opportunity to investigate the activities of late prehistoric Plains nomad societies at a time when they were initially entering the area is unusual and may be quite significant, not only for an understanding of Crow and Hidatsa ethnohistory, but for understanding the ethnohistory of numerous other groups who entered the North American Plains in late prehistoric and historic time.

Importance Criteria: This area meets importance criterion 1. The Stark Site Complex possesses information that is regionally significant. Equally as important is the fragility and vulnerability of the sites. The area is well known to artifact collectors and is easily accessible by a county road. The reports for sites in the complex include several references to unauthorized digging in site deposits. With repeated collection and vandalism, this valuable and interesting group of sites could be stripped of diagnostic artifacts and otherwise rendered useless for scientific and educational purposes in the future.

Summary: This cultural complex meets the relevance and importance criteria. The area is approximately 800 public surface acres in size and is considered eligible for nomination to the National Register of Historic Places. The area lies within T. 9 N., R. 23 E. (see map 2). Although bison kill and butchering sites on the Northwestern Plains are not uncommon, the Stark Site complex represents the greatest density of such sites known on public land in south-central Montana. The presence of both kill and processing sites dating over a considerable span of time provides the opportunity to compare hunting and related strategies by various groups using the site over differing time periods. The area is considered significant for its information potential on the prehistory and history of Native American societies in the plains environment and is recommended for ACEC designation.

BLM management objectives should involve the long-term conservation of this site for future generations to study and enjoy. Further fieldwork in the area may identify related sites. Artifacts and records could be studied and used to help explain the history and behavior of prehistoric and historic hunting groups in the region.

WEATHERMAN DRAW: Nominated for unique cultural values.

Relevance Criteria: This area meets relevance criterion 1 as a significant cultural property. Weatherman Draw contains rare archaeological resources - panels of rock art with associated buried material, and is of concern to contemporary Native Americans. Significant information may be gained from the study and preservation of this rock art.

Importance Criteria: Weatherman Draw meets importance criteria 1 and 2. It contains information that is regionally significant. Previous excavations in the area have dated the shield-bearing warrior art style to AD 1105, representing the first absolute date on this style of art. The rock art is fragile, and vulnerable to vandalism.

Summary: The area meets the relevance and importance criteria. Weatherman Draw consists of 40 rock art sites, some with associated buried deposits. Most of the rock art exhibits a high degree of preservation. The area is 4,268 public surface acres in size and is located within T. 8 S., and T. 9 S., R. 24 E. (see map 2). These sites are considered eligible for nomination to the National Register of Historic Places. Weatherman Draw is significant because of its information potential on the prehistory and history of the Native American in the plains environment. The area has potential to provide information on the ethnohistory of Native Americans and is recommended for ACEC designation.

BLM management objectives should involve conservation for future use of the majority of the sites in this area. Only very significant research questions will be considered; studies would instead be directed to other similar sites not within the complex. A limited number of sites will be allocated to scientific use in order to establish baseline information.

POWDER RIVER RMP AREA

ALZADA OAKS: Nominated for a sensitive plant species.

Relevance Criteria: Alzada Oaks meets relevance criterion 3. The Bur Oak is a sensitive plant species in a riverine setting.

Importance Criteria: Alzada Oaks does not meet any of the importance criteria. The Alzada Oaks are not rare or unique. The stand is not more than locally significant. The riverine setting has allowed the trees to grow much taller than other examples of this species in the surrounding vicinity. Although usually found in a scrubby form on shale ridges, the species itself is replicated in the surrounding area and portions of western Montana, South Dakota and Wyoming.

Summary: Alzada Oaks is approximately 40 public surface acres in size located in T. 9 S., R. 60 E., section 31: Lot 1, one mile south of Alzada (see map 10). This stand of oaks is an excellent example of the species, particularly since this grove contains two of the largest examples of the tree in Montana, but it does not have more than locally significant qualities. The area meets the relevance criteria, but not the importance criteria. It is not recommended for ACEC designation.

BATTLE BUTTE BATTLEFIELD: Nominated for unique historic values.

Relevance Criteria: Battle Butte Battlefield meets relevance criterion 1. This significant site is 1 of 12 major battlefields of the Sioux War. This war and associated sites are of major interest to both national historians and history buffs as well as the Native American cultures of the Sioux, Crow and Cheyenne.

Importance Criteria: Battle Butte Battlefield meets importance criteria 1, 2 and 3. This site is part of a battle directly associated with Crazy Horse, one of the Sioux's main leaders. Battle Butte Battlefield contains irreplaceable information and is vulnerable to adverse change. The site is exemplary of Sioux War battles. The battlefield possesses values that warrant protection as mandated by the Federal Land Policy and Management Act of 1976.

Summary: The Battle Butte Battlefield is approximately 120 public surface acres in size and located in portions of T. 6 S., R. 42 E., sections 33 and 34 (see map 4). Battle Butte, or Wolf Mountains Battle, was fought on January 8, 1877 in a blinding blizzard. Lead by army scout Yellowstone Kelly, Colonel Nelson Miles commanded a force of 436 men comprising seven companies of the 5th and 22nd infantry. They marched from the Tongue River Cantonment south along the Tongue River in search of Native American winter villages. After 10 days march up the river, Miles' command encountered warriors from Crazy Horse's winter camp, consisting of 1,200 inhabitants, located south of Birney, Montana. The Sioux attacked west of the Tongue River, then occupied the high ground (Battle Butte) to the south of Miles' forces. It is estimated that Crazy Horse's forces numbered 600 warriors. The Sioux held the advantage with the high ground, firing down into the U.S. soldiers' positions. Miles ordered his men to attack up hill to take command of the high ground. Once Miles' men were able to hold the high ground, the Sioux's advantage was lost. Low on ammunition, the Sioux retreated upstream. In the ensuing blizzard, the Sioux were able to escape up the Tongue River. Both sides suffered casualties.

The area meets the relevance and importance criteria and is recommended for ACEC designation.

DEADHORSE BADLANDS: Nominated for outstanding scenic values, size and naturalness.

Relevance Criteria: Deadhorse Badlands does not meet any of the relevance criteria. The scenic values attributed to the area, such as cone-shaped mounds, are not rare and can be found throughout southeastern Montana. The Deadhorse Badlands area in not unique and is similar to other mixed grass prairie areas found in southeastern Montana.

Importance Criteria: Deadhorse Badlands does not meet any of the importance criteria. The area does not possess more than locally significant qualities.

Summary: Deadhorse Badlands is approximately 35,000 public surface acres in size located in portions of T. 6 S., T. 7 S., R. 56 E., 57 E., and 58 E. (see map 9). The area's wilderness values were evaluated in 1980, but Deadhorse Badlands did not meet the criteria for wilderness study. While Deadhorse Badlands is a large block of public land, size is not a factor under the ACEC criteria. Numerous areas in southeastern Montana have similar topography and scenery. The area does not meet the relevance or importance criteria and is not recommended for ACEC designation.

FINGER BUTTES: Nominated for scenery and a sensitive plant species.

Relevance: Finger Buttes meets relevance criteria 1 and 2. The area represents more than badlands topography, a rather typical topography type for southeastern Montana. Finger Buttes has scenic qualities of color, line and form consisting of bare sandstone pinnacle topography, skylined on the horizon, creating an interesting view. These scenic values are unique and do not exist elsewhere in the local or regional area.

Importance: Finger Buttes meets importance criteria 1 and 2. The area consists of a series of pipestem and tower sandstone outcrops not found elsewhere in the area. The Finger Buttes area is fragile, irreplaceable, and vulnerable to adverse change.

Summary: Finger Buttes is approximately 1,520 public surface acres located in T. 6 S., R. 60 E., sec. 7: N1/2 NE1/4, SE1/4NE1/4; sec. 8: N1/2, SE1/4; sec. 9: S1/2; sec. 10: SW1/4, W1/2SE1/4; and sec. 15: W1/2NE1/4, NW1/4, N1/2SW1/4, NW1/4SE1/4. There is no legal access into the area (see map 5). It consists of tall, slim, smokestack-like tan to gray sandstone monuments, towers and prominences. These buttes are formed in the Arikaree Formation, a formation that appears in southeastern Montana. The area possesses outstanding scenery. The Natural Heritage Program's 1996 Carter County survey for sensitive plant species located *Haplopappus Malticaulis* in such quantity that it is no longer considered a sensitive plant species. Finger Buttes meets the relevance and importance criteria because of its scenic value and is recommended for ACEC designation.

HOWREY ISLAND: Nominated for special wildlife habitat.

Relevance: Howrey Island meets relevance criterion 2. The island provides habitat for a threatened species, the bald eagle, and has habitat essential for maintaining species diversity.

Importance: Howrey Island meets importance criterion 2. The island has qualities and values that make it fragile, sensitive and unique.

Summary: Howrey Island is approximately 321 public surface acres located within T. 6 N., R. 35 E., sections 15, 21, and 22 (see map 6). This area is one of the few islands in the Yellowstone River managed by the BLM. A variety of wildlife species inhabit the island, such as white-tailed deer, ring-necked pheasant, waterfowl, numerous furbearers, and various non-game species. Howrey Island meets both the relevance and importance criteria and is recommended for ACEC designation.

MATTHEWS WILDLIFE AND RECREATION AREA: Nominated for wildlife, vegetation.

Relevance Criteria: The area meets relevance criterion 2. The Matthews Wildlife and Recreation Area provides habitat essential for maintaining species diversity.

Importance Criteria: The area does not meet any of the criteria for importance.

Summary: The Matthews Wildlife and Recreation Area is located within T. 9 N., R. 48 E., section 30 (see map 11). It is approximately 75 public surface acres in size and located nine miles downriver from Miles City. It is a popular recreation area for Miles City residents and has recreational improvements, such as a concrete handicap trail, picnic tables and parking areas. This riparian area provides habitat for a variety of wildlife species, such as ring-necked pheasants, waterfowl, beaver, other fur-bearers and numerous nongame birds. The area has been planted with a variety of grass species, grain food plots, and shelterbelts to provide year-round habitat for pheasants and other bird species. This recreation area provides hunting, fishing and picnicking opportunities for the public. The area meets the relevance criteria, but not the importance criteria. It is not recommended for ACEC designation.

REYNOLDS BATTLEFIELD: Nominated for significant historic values.

Relevance: Reynolds Battlefield meets relevance criterion 1. This significant site from the Sioux War and associated sites are of major interest to both national historians and history buffs as well as the Native American cultures of the Sioux, Crow and Cheyenne.

Importance: Reynolds Battlefield meets importance criteria 1, 2 and 3. The area is exemplary of Sioux War battle sites. The battlefield is rare, 1 of only 12, this one being the first of the major battles. The Reynolds Battlefield possesses values that warrant protection as mandated by the Federal Land Policy and Management Act of 1976.

Summary: The Reynolds Battlefield is approximately 336 public surface acres in size and located in portions of T. 8 S., R. 48 E., sections 28, 29, 32 and 33 (see map 4). The Reynolds Battle is the first engagement of 12 major battles of the Sioux War of 1876-1877. The Big Horn Expedition left Fort Fetterman, Wyoming in mid-February and endured almost continual harsh winter weather with sub-zero temperatures. Marching north up the Powder River drainage they crossed into Montana, near Decker, and proceeded down the Tongue River to Hanging Woman Creek. There, Crook ordered Colonel Joseph J. Reynolds, 3rd Cavalry, with six companies of the 2nd and 3rd Cavalry to attack the only village they had found thus far, a village to the east on the Powder River. Reynolds attacked the village at dawn on March 17, 1876. In the early morning battle, the troops captured the village, burning all of the camp tepees. Most of the camp inhabitants were able to escape. Some 800 ponies were also captured. The Native Americans retaliated by firing down into the army positions from a high bluff to the west. The troops withdrew under heavy fire. Their hasty withdrawal, ordered by Reynolds, resulted in four army dead left in the field. Later that night, the Native Americans recaptured their horse herd. Crook was enraged by these events and ordered Reynolds court-martialed. One damaging aspect of this battle was the fact that the village was not Sitting Bull's Sioux camp, as originally thought, but a Cheyenne camp on their way back to the reservation. This unprovoked attack on peaceable Native Americans turned the Cheyenne against the U.S. government. The Cheyenne sided with the Sioux and participated in most of the subsequent phases of the war.

Reynolds Battlefield meets the relevance and importance criteria and is recommended for ACEC designation.

SOUTH DAKOTA RMP AREA

FOSSIL CYCAD AREA: Nominated for unique paleontology values.

Relevance Criteria: The Fossil Cycad area meets relevance criterion 3 for a natural process or system. The area contains a rare fossilized plant species. This fossil material has contributed significantly to the understanding of geologic time, life and earth history. Knowledge may also be gained about the paleoenvironment during the early Cretaceous Period, evolutionary processes, and the development of flowering plant species and conifers.

Importance Criteria: The Fossil Cycad area meets importance criteria 1 and 2. The area possesses more than locally significant qualities, and geologic values that are fragile, rare, irreplaceable and unique.

Summary: The Fossil Cycad area is 320 public surface acres located within T. 7 S., R. 3 E., section 35 (see map 7). The Fossil Cycad area consists of a rare fossilized plant known in only three other places on earth. It can be described as a true petrified forest. The area presents a unique opportunity for the study of a rare fossil plant. The area meets both the relevance and importance criteria and is recommended for ACEC designation.

BLM management objectives should involve the long-term conservation of the area's geologic, and paleontologic values for future generations to study and enjoy.

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APPENDIX 2
LOCATABLE MINERALS

REASONABLE FORESEEABLE DEVELOPMENT - EAST PRYOR MOUNTAINS

The purpose of this reasonably foreseeable development scenario (RFD) is to provide a model that anticipates the type and level of future locatable mineral activity in the 29,000 acre Pryor Mountain Wild Horse Range. The RFD will in turn serve as a basis for cumulative impact analysis. This RFD reflects the current management situation which provides for claim staking, exploration, and mining. At the present, there are no active mining claims in the Pryor Mountain Wild Horse Range, there is no exploration proposed, and mining is not reasonably foreseeable.

The RFD is based on inferred mineral resource capabilities of the lands involved, and applies conditions and assumptions with minimal geologic data to support them. Economic and regulatory conditions are also factored into this analysis. The RFD does not constitute proof that a minable mineral deposit is absent. Changes in available geologic data and economic or legislative conditions could alter this analysis.

The locatable mineral commodities present in the Pryor Mountain Wild Horse Range consist of limestone, uranium, vanadium, bentonite, and gypsum. Uranium and vanadium are of primary interest.

Under the mining law a person has a statutory right to go upon unappropriated and unreserved federal lands for the purpose of mineral prospecting, exploration, development, and extraction. The basic elements of the law consist of discovery of a valuable mineral deposit, location, recordation and maintenance of mining claims, and patenting. It is the policy of the Department of Interior to encourage the development of federal minerals and the reclamation of disturbed lands.

The Federal Land Policy and Management Act of 1976 requires responsible management of mineral development and actions to prevent unnecessary or undue degradation. FLPMA also allows for restrictions on off-road vehicle use, designation of Areas of Critical Environmental Concern (ACECs), and mineral withdrawals when necessary and if substantial supporting documentation and rationale are provided. Withdrawals are approved by the Secretary with certain levels of Congressional involvement depending on the acreage involved.

The 43 CFR 3809 regulations generally provide for three levels of activity consisting of 1) Casual Use (for non-mechanized disturbance; 2) Notices (for mechanized disturbance less than 5 acres); and 3) Plans of Operation (for disturbance greater than 5 acres). Only Plans of Operation require formal approval and a NEPA analysis. However, notice-level activity within an ACEC or an area designated "closed" to off-road vehicle use is elevated to a plan of operation and the requirements thereof.

The bureau works cooperatively with the Montana Department of Environmental Quality (DEQ) who has similar requirements and additional authority to bond most mining activities for the full amount of reclamation. Uranium mining in Montana is subject to requirements for disposal of radioactive material (75-3-302) which, in effect, prohibit conventional mining and milling within the state (per. comm., Bonnie Lovelace, DEQ, Gary Langley, Montana Mining Association).

No mining claims were held before 1955 in the East Pryor Mountains, and almost all of the claims staked for uranium or vanadium were held in 1956, 1957, and in the late 1970's. Approximately 500 claims were staked within the Pryor Mountain Wild Horse Range during this period. There are no patented claims in or near the Pryor Mountain Wild Horse Range. As of February 1996 there were 8 active claims in the Pryor Mountain mining district and no active claims in the Pryor Mountain Wild Horse Range.

Uranium and vanadium have been produced from the East Pryor mine within the Pryor Mountain Wild Horse Range and from small deposits less than 5 miles west of the study area. The U.S. Department of Energy (DOE) production and reserve data for the Pryor Mountain-Little Mountain mining districts indicate that about 223,000 pounds of uranium oxide, at an average ore grade of 0.36 percent, were produced from 19 properties, and that 236,000 pounds of vanadium pentoxide, at an average ore grade of 0.416 percent, were co-produced from 15 of these properties. Reserves for deposits outside the Pryor Mountain Wild Horse Range were estimated by the DOE to be about 420,000 pounds of uranium at a average grade of 0.07 percent. No estimates are available for vanadium. No reserves were estimated within the Pryor Mountain Wild Horse Range, however, the East Pryor mine (abandoned) is likely to have produced as much as 200 tons of uranium-vanadium ore of an unspecified grade. In the early years, much of the ore shipped from the Pryor Mountains was subsidized by the Atomic Energy Commission.

U.S. Geological Survey Bulletin 1723 assessed the identified (known) resources and the mineral resource (occurrence) potential of most of the Pryor Mountain Wild Horse Range in 1988. This study concludes that the mineral resource potential (i.e., occurrence of undiscovered commodities) for uranium and vanadium is high or moderate within significant portions of the Pryor Mountain Wild Horse Range and a small portion of the range has moderate resource potential for bentonite.

All other identified locatable minerals, i.e., high-purity limestone, agricultural-grade limestone, and gypsum, are present in various nonmarketable quantities. Limited mineral occurrence, the cost of transportation, or marginal mineral grade singularly or in combination is the basis for this determination.

The demand for uranium worldwide is expected to remain relatively flat at least through 2010. Worldwide consumption of uranium has been higher than production for about the past five years; however, excess civilian inventories accumulated during the 1970s and 1980s will continue to meet expected demand levels for the foreseeable future. In addition, current U.S. and Russian military inventories of highly-enriched uranium will be converted to low-enriched uranium for use in nuclear power plants over the next twenty years. Continued opposition to nuclear power also is expected to hinder the growth in demand for uranium. These market conditions, combined with the regulatory constraints on mining uranium in Montana, indicate the likelihood of developing new minable uranium deposits in the foreseeable future is extremely low.

Because vanadium would be recovered as a by-product of uranium production in the Pryor Mountain Wild Horse Range, market conditions for uranium will be the controlling factor in vanadium production rather than vanadium market conditions.

Uranium and vanadium are the only locatable minerals of notable interest in the Pryor Mountain Wild Horse Range. Given the speculative nature of mineral occurrence, the small scale of the deposits just west of the Pryor Mountain Wild Horse Range (none exceed 8,000 tons with most in the 500 ton range), the meager historic activity in the Pryor Mountain Wild Horse Range (one mine which produced 200 tons), the state's regulatory constraints, and the commodity market forecasts, no development is expected to occur in the foreseeable future.

However, under current management it is reasonable to expect approximately 5 claim stakings within the next 20 years. Exploration would consist of geologic mapping, hand-held geiger counter or scintillometer surveys to detect radiation, and rock sampling using very little mechanized equipment. It is reasonable to expect 2 exploration drillholes using a truck-mounted diamond-bit drilling rig within the next 20 years. One each seismic and gravimetric survey on a regional scale would include the Pryor Mountain Wild Horse Range.

REASONABLE FORESEEABLE DEVELOPMENT - FOSSIL CYCAD AREA

The purpose of this RFD is to provide a model that anticipates the type and level of future locatable mineral activity in the 320 acre Fossil Cycad Area. At present, there are no active mining claims in the Fossil Cycad area, no exploration is proposed, and mining is not reasonably foreseeable.

The locatable mineral commodities present in the Fossil Cycad area consist of uranium and vanadium.

USGS Bulletin 1580 assessed the known resources and the mineral resource occurrence potential of most of the Fossil Cycad area in 1986. This study concludes that the mineral resource potential (i.e., occurrence of undiscovered commodities) for uranium and vanadium is high for a medium sized roll front type deposit within the Fossil Cycad area.

Deposits of uranium in the Fossil Cycad area are found within the Cretaceous age Inyan Kara formation. The deposits themselves occur in what is termed a roll front deposit. The mineralization occurs in porous sedimentary sandstone units; form long irregular, lens shaped bodies and roughly have a cross sectional shape of the letter "C". The roll front contains the uranium ore and is thought to form in response to uraniferious ground waters moving through the porous sandstone. The uranium is then precipitated out of solution through contact with carboniferous materials within the sandstone host rock.

Historically, these types of deposits were mined through both open pit and underground mining methods. However, in Wyoming these same typed of deposits are now being mined through the in-situ leaching process.

In-situ leaching involves extracting the ore by injecting a fluid through a central injection well, into the ore zone. The fluid entrains the uraniferious minerals where it is extracted and brought to the surface by one of several production wells which form a circle around the central injection well. The fluid is then pumped into a central processing plant where the uranium is extracted.

In situ uranium mining is a much more efficient, cost effective method of mining which allows uranium mining to continue and expand at a modest pace in central Wyoming.

It is possible that this type of mining could occur sometime in the future at the Fossil Cycad area should a uranium deposit be discovered there.

However, current interest in the uranium business in South Dakota in very low to nil. There are no mines in operation and no indication of any pending activity (personal Communication, Tom Durkin, South Dakota Dept. of Environment and Natural Resources).

The Fossil Cycad area is near the Edgemont Mining District which has produced most of the uranium in the Black Hills region. Production came from several mines the largest of which were the Gould, Triangle and Runge, USGS (1986).

Given the speculative nature of mineral occurrence and the commodity market forecasts, no development is expected to occur in the foreseeable future.

However, under current management it is reasonable to expect approximately 5 claim stakings and one exploration program consisting of 2 exploration drillholes using a truck-mounted drilling rig within the next 20 years.

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APPENDIX 3
OIL AND GAS LEASE STIPULATIONS

(ALTERNATIVE C - PREFERRED ALTERNATIVE)

NO SURFACE OCCUPANCY

Use or occupancy of the land surface for fluid mineral exploration or development is prohibited in order to protect identified resource values. The no surface occupancy stipulation includes stipulations which may have been worded as "No Surface Use and Occupancy," "No Surface Disturbance," "Conditional No Surface Occupancy," and "Surface Disturbance or Occupancy Restriction (by location)."

RESOURCE: Cultural Resources.

Stipulation: Surface occupancy and use is prohibited within sites or areas designated for conservation use, public use, or sociocultural use, such as Battle Butte, Reynolds Battlefield, and the Stark Site.

Objective: To protect cultural properties identified for conservation use, public use, and sociocultural use.

Exception: An exception to this stipulation can be granted by the authorized officer if the lessee or operator submits a plan which demonstrates that the cultural resource values which formed the basis for designation are not affected, or if adverse impacts are acceptable or can be adequately mitigated.

Modification: The boundaries of a stipulated area can be modified if the authorized officer determines that portions of the designated site or area can be occupied without adversely affecting the cultural resource values for which the site or area was designated.

Waiver: This stipulation can be waived if the authorized officer determines that the designated sites or areas within the leasehold can be occupied without adversely affecting the cultural resource values for which such sites or areas were designated, or if all designated sites or areas within the leasehold are allocated for other uses.

NOTE: Compliance with Section 106 of the National Historic Preservation Act is required for all actions which can affect cultural properties eligible for the National Register of Historic Places.

RESOURCE: Weatherman Draw.

Stipulation: Surface occupancy and use is prohibited within sites or areas designated for conservation use, public use, or sociocultural use.

Objective: To protect Weatherman Draw, identified for conservation use.

RESOURCE: Visual Resources and Scenic Values Within the Core Area of Finger Buttes.

Stipulation: Surface occupancy and use is prohibited in Finger Buttes to help meet the visual quality objectives for the area.

Objective: To help control the visual impacts of activities and facilities.

Exception: An exception to this stipulation can be granted by the authorized officer if the lessee or operator submits a plan where BLM determines that the scenic values which formed the basis for designation are not affected, or adverse impacts can be adequately mitigated.

Modification: The boundaries of a stipulated area can be modified if the authorized officer determines that portions of the designated site or area can be occupied without adversely affecting the scenic values for which the site or area was designated.

Waiver: This stipulation can be waived if the authorized officer determines that areas within the leasehold can be occupied without adversely affecting the scenic values for which the area was designated.

CONTROLLED SURFACE USE

Use or occupancy is allowed (unless restricted by another stipulation), but identified resources values may require special operational constraints that may modify the lease rights. Controlled surface use is used for operating guidance, not as a substitute for the no surface occupancy or timing stipulations.

RESOURCE: Soils.

Stipulation: Prior to surface disturbance on slopes over 30 percent, an engineering/reclamation plan must be approved by the authorized officer. The plan must demonstrate how the following will be accomplished.

-Site productivity will be restored.
-Surface runoff will be adequately controlled.
-Off-site areas will be protected from accelerated erosion, such as rilling, gullying, piping, and mass wasting.
-Water quality and quantity will be in conformance with state and federal water quality laws.
-Surface disturbing activities will not be conducted during extended wet periods.
-Construction will not be allowed when soils are frozen.

Objective: To maintain soil productivity, provide necessary protection to prevent excessive soil erosion on steep slopes, and to avoid areas subject to slope failure, mass wasting, piping, or having excessive reclamation problems.

Exception: None.

Modification: The area affected by this stipulation can be modified by the authorized officer if it is determined that portions of the area do not include slopes over 30 percent.

Waiver: This stipulation may be waived by the authorized officer if it is determined that the entire leasehold does not include slopes over 30 percent.

APPENDIX 4
ECONOMICS

TIMBER AND WOOD PRODUCT SALES

BILLINGS RMP AREA

Across the planning area, the primary forestry-type products are salvage firewood, dead juniper, and an occasional timber sale. Salvage firewood sales would typically occur after a fire. A typical salvage may result in 10 to 20 firewood permits (up to 100 - 200 cords of wood). Salvage firewood sales would primarily be considered noncommercial, benefiting residents in the Billings area seeking firewood for home use. For the past seven years (1990 - 1996) firewood cutting totaled 160 cords, or about 23 cords on average annually across the Billings Field Office. Total revenue to the federal government was $771, or about $110 annually, at approximately $5 per cord.

Dead juniper sales have been occurring in the Billings Field Office over the past three to four years. The proposed Petroglyph Canyon and Weatherman Draw ACECs are the primary areas that supply dead juniper. It is used by furniture makers in the Red Lodge and Joliet areas to make furniture. About $100 in permits is received by BLM each year. The economic impact from harvesting dead juniper on public lands is minor; it's main contribution is to local furniture making. If it were unavailable for this purpose, other materials might be substituted, depending on a particular furniture-maker's needs.

Over the past six years (1990 through 1996), about 186 MBF (thousand board feet) of commercial timber has been harvested annually on public lands across the Billings Field Office including the planning area. This is approximately 0.3 of one percent of the average annual timber harvest on BLM-administered lands throughout Montana. Total revenue to the federal government from these timber sales was $68,280 or about $9,800 per year ($53/MBF on average), although the range of sales values has varied widely. All of these sales have been negotiated (noncompetitive) as opposed to advertised (competitive).

The recent level of activity is somewhat higher than the long-term average harvest in the past. Timber harvest activity on private, public, and state lands across the entire south central region of the state has increased due to higher timber prices and restrictions on timber harvests in other regions of the Northwest. Typical commercial operators harvesting this timber would include corporations such as R-Y Lumber and JD Lumber, and smaller local operations. In addition, some timber in this area is shipped to mills in South Dakota and Sheridan, Wyoming.

Alternative A

For analysis purposes, it was estimated overall that the following sales would occur over the next 20 years under current management.

Salvage firewood:	3 in 5 years
	12 in 20 years
Dead juniper:	10 in 5 years
	40 in 20 years
Timber sale:	1 in 20 years

All of these sales would occur in Carbon County with the exception of two salvage firewood sales over the next 20 years (one each in Castle Butte in Yellowstone County and at the Stark Site in Musselshell County).

Under current management, it is anticipated that 3 salvage firewood sales in 5 years and 12 sales in 20 years could occur. (Note that 10 of the 12 salvage firewood sales anticipated over the next 20 years are assumed to occur in the East Pryor Mountains which is currently a wilderness study area where no firewood cutting is allowed. However, in the event that it is ultimately not designated as a wilderness area, it is possible the area would be open for wood product sales. Due to the speculative nature of these 10 sales, they are not included in this economic analysis. However, including these sales would not alter overall economic impacts.) Considering past activity this could net 20 permits for 200 cords of wood. At $5 per cord, revenue to the federal government would total $1,000 over the next 20 years. Because these sales are primarily noncommercial and benefit mostly individuals who use firewood, there would be very little if any economic impact from continued availability of salvage firewood, although travelling a greater distance for firewood would be an inconvenience.

Under current management it is anticipated that one negotiated timber sale for 100 MBF could occur over the next 20 years, probably in the Meeteetse Spires area in Carbon County. Assuming an estimated sale value of $100/MBF, total revenue to the federal government in today's dollars could be $10,000. At the current annual harvest level across the Billings Field Office, this timber sale would represent about two to three percent of the total harvest over the next

20 years. Given the level of activity occurring on public, private, state, and federal lands across the south central region of Montana and statewide, this timber sale would contribute in only a minor way to regional economic activity. However, because timber on public lands tends to be in lower-elevation areas than other timber and harvests can sometimes occur in the winter where higher-elevation harvests would be impossible, the anticipated timber sale of 100 MBF may offer additional opportunities for smaller local mills to operate through the winter rather than close from lack of supply.

Overall, wood product sales would contribute in only a minor way to regional economic activity. Salvage firewood sales would benefit primarily local residents looking for a convenient and easily accessible source of heating wood. Dead juniper sales would provide a supply of building materials for local furniture makers. The timber sale assumed over the next 20 years may provide a short-term economic boost to local mill operators.

Alternative B

There would be 3 fewer sales in 5 years and 12 fewer sales in 20 years if the ACECs were closed to wood product sales. (Note that 10 of the 12 sales are assumed to occur in the East Pryor Mountains which is currently closed to wood product sales and its eventual opening is uncertain; therefore, these 10 sales are not included in this economic analysis.) In current dollars, lost revenue to the federal government from these sales could total $[illegible]000. These sales would be mostly of a noncommercial nature, primarily providing a source of firewood for heating for local residents, so the economic impact from loss of sales would be minimal across the ACEC area counties. Further, it is possible that other nearby areas outside the ACECs may be available for salvage firewood which could reduce some or all of the loss.

Under this alternative Petroglyph Canyon and Weatherman Draw would be closed to wood product sales, potentially affecting the availability of dead juniper. If dead juniper stands could not be located nearby outside the ACECs on public lands, the estimated loss of revenue to the federal government could be $100 each year. Local furniture makers may lose a nearby supply. Additional supplies may be found outside the ACECs on either public or private land resulting in no economic impact. If loss of availability is not offset by additional supplies nearby, costs to furniture makers may increase if they must travel greater distances to find dead juniper. If supplies cannot be found, other materials might be substituted which may or may not create an economic impact depending on the cost and availability of those materials.

It is anticipated that one timber sale over the next 20 years could be lost due to closure of Meeteetse Spires ACEC to timber sales. At current timber sale rates, this could reduce revenue to the federal government by $10,000 over the 20-year period, a minor impact. The loss of timber to local mill operators would also likely be a minor impact because timber may be available from other sources such as private, state, or other federal lands in addition to BLM-administered lands outside the ACECs.

Overall, the loss of wood product sales from designating the areas as ACECs would be minor. Salvage firewood sales, which mainly benefit local residents looking for a convenient and easily accessible source of heating wood, may be lost. The loss of dead juniper may impact local furniture makers that prefer this material. The potential loss of one small timber sale would reduce future economic activity slightly, possibly for local mill operators. In all of these cases, other sites may become available for harvesting forest products which would reduce the impact from loss of wood product and timber sales in the ACECs.

Alternative C

Overall, the impacts would be similar to Alternative A, with the exception of availability of dead juniper. Petroglyph Canyon and Weatherman Draw would remain closed to wood product sales so the impacts to availability of dead juniper would be the same as under Alternative B.

POWDER RIVER RMP AREA

The primary wood products are firewood, post and poles, and an occasional timber sale. Over the past seven years (1990-1996), virtually all wood product sales have been for hay and alfalfa across the Powder River RMP area. During this time period there was one small timber sale (1997) for 20.4 thousand board feet (MBF) and one firewood permit (1990) for five cords of wood. Firewood permits and post and pole sales would benefit primarily local residents. Timber sales would benefit primarily small local mills or mills from outside the area.

Alternative A

For analysis purposes, it was estimated overall that the following wood product and timber sales could occur over the next 20 years under current management:

Firewood:	3 in 5 years
	9 in 20 years
Post & pole:	1 in 20 years
Timber sales:	1 in 20 years

These sales would occur over a wide area, including Carter, Powder River, and Treasure Counties. Firewood permits would be issued for $10 for 2 cords of wood. Over the next 20 years 9 permits would generate $90 in revenue. The post and pole permit also could generate about $100 in 20 years (based on average revenue value of post and pole sales in the Billings Field Office since 1990).

One timber sale is assumed to produce 10 thousand board feet (MBF). This small timber sale in the Reynolds Battlefield would generate $1,000 in sales revenue (assuming an estimated sale value of $100/MBF). A timber sale in this area would most likely benefit a mill in southeast Montana.

Alternative B

There would be 3 fewer sales in 5 years and 11 fewer sales in 20 years if the ACECs were closed to wood product and timber sales. Foregone sales under this alternative would be firewood (9 sales), one post and pole sale and one small timber sale for 10,000 board feet. Potentially foregone sales revenue could total $1,200 over 20 years ($1,000 from the timber sale and $190 from the wood products sales).

Overall, the loss of wood product sales from designating the study areas as ACECs would be minor. Firewood sales, which mainly benefit local residents looking for a convenient and easily accessible source of heating wood, may be lost. The potential loss of one timber sale and one post and pole sale would reduce future economic activity slightly, possibly for local mill operators. In all of these cases, other sites may be available for harvesting forest products which would reduce the impact from loss of sales in the ACECs.

Alternative C

The impacts would be similar to Alternative A, although restrictions may be an inconvenience. Other areas outside the ACECs may be available for firewood which would reduce the impact from restricting wood product sales.

SOUTH DAKOTA RMP AREA

Alternative A

For analysis purposes, it was estimated overall that the following wood product and timber sales could occur over the next 20 years under current management:

Firewood:	5 in 20 years
Timber sale:	1 in 20 years

Firewood permits would be issued for $10 for two cords of wood. Over the next 20 years five permits would generate $50 in revenue. One small timber sale (20,000 board feet) would generate about $2,000 in sales revenue (assuming an estimated sale value of $100/MBF).

Alternative B

Five firewood permits and one small timber sale (for 20 MBF) could be foregone due to closure of the Fossil Cycad Area to wood product and timber sales. This could reduce revenue to BLM by $50 from foregone firewood permits and about $2,000 from a foregone timber sale. This impact would be minor. Further, these products may be available outside the boundaries of the study area which would reduce the estimated impact.

Alternative C

The impacts would be the same at Alternative B.

LIVESTOCK GRAZING MANAGEMENT

BILLINGS RMP AREA

Alternative A

There would be no economic impacts.

Alternative B

Under this alternative two permittees would lose a total of 28 animal unit months (12 animal unit months and 16 animal unit months) due to elimination of livestock grazing in the Meeteetse Spires ACEC. These AUM reductions represent one percent of each lessees' permitted animal unit months. BLM would incur about $2,000 to build a fence and $25 annually for fence maintenance. In addition, grazing fee receipts would decline $38. Overall, economic impacts to the permittees and across the Field Office area would be minor.

Alternative C

There would be no economic impacts.

POWDER RIVER RMP AREA

Alternative A

There would be no economic impacts.

Alternative B

Across the area there would be a reduction of 457 animal unit months due to elimination of livestock grazing in the proposed ACEC sites. This represents a small porion of the

177,000 animal unit months authorized in the Powder River RMP area. These reductions would affect 9 permittees.

To the permittees, this represents an equivalent of 38 animal units. The impact to each permittee would vary depending upon how many animal unit months each permittee loses, the percentage these animal unit months represent to their total operations, and the flexibility they have within their operations to compensate for these losses. Herd size may need to be reduced, alternative forage may need to be obtained to maintain current herd size, or other adjustments may need to be made to compensate for reduced forage.

Cumulatively, the total regional economic impact across the area due to a loss of 457 animal unit months, including direct, indirect, and induced effects, would be an estimated loss of personal income of $12,800 annually and one job. Regional economic impacts were estimated using multipliers developed for the Standards for Rangeland Health and Guidelines for Livestock Grazing Management Draft Environmental Impact Statement (BLM, 1996b).

In addition to animal unit month reductions, an estimated 15.5 miles of fence and other related structures such as cattleguards would need to be built to exclude livestock grazing in the ACECs. Total estimated construction costs are $83,000 with an additional $7,500 in annual maintenance costs. Grazing fee receipts would decline $617. This would reduce range improvements funds by $309, revenues to counties by $183 and receipts to the federal treasury by $126.

Battle Butte: At this site, one allotment would lose nine animal unit months out of a total 1,439 animal unit months. This reduction is not anticipated to have a substantive effect on the permittee. The regional economic impact including direct, indirect, and induced effects, would be an estimated loss of personal income of $250 annually and less than one job. Fence construction is estimated to cost BLM $8,800 with an additional $1,000 annual maintenance.

Finger Buttes: Restrictions to livestock grazing would eliminate 181 of a total 3,584 animal unit months for four allotments, affecting five permittees. The McNight allotment would lose 11 of 216 animal unit months (5 percent), the Finger Butte Ranch allotment would lose 70 of 83 animal unit months (84 percent), the Hawksnest Creek allotment would lose 30 of 980 animal unit months (3 percent), and the Thomas and Walker allotments would lose 70 of a total 2,100 animal unit months (3 percent). The regional economic impact including direct, indirect, and induced effects, would be an estimated loss of personal income of $5,100 annually and less than one job. Smaller operations with greater relative dependency on the public forage being excluded may be impacted. Additionally, fence construction is estimated to cost BLM $50,000 with an additional $4,000 annual maintenance for 10 miles of fence.

Howrey Island: Closing this site to livestock grazing would eliminate all 200 animal unit months on the Howrey Island allotment, affecting about 15 to 20 percent of the permittee's operation. The cattle operation is run on three pastures and in addition the permittee has a farming operation. Eliminating grazing at Howrey Island would eliminate one of those pastures and, consequently, the permittee may graze livestock more intensively on his remaining two pastures. The regional economic impact including direct, indirect, and induced effects, would be an estimated loss of personal income of $5,600 annually and less than one job. Additionally, BLM would incur $500 annually for maintaining a temporary electric fence at the site.

Reynolds Battlefield: Closing this site to livestock grazing would eliminate 67 animal unit months of a total 2,820 animal unit months for two allotments, affecting two permittees. The Buffalo Creek allotment would lose 29 of 2,740 animal unit months. The other allotment, Thompson Creek, would lose 38 of 80 animal unit months. These reductions would have only a minor effect on the two permittees. The regional economic impact including direct, indirect, and induced effects, would be an estimated loss of personal income of $1,000 annually and less than one job for the Thompson Creek permittee and $2,950 of annual personal income and less than one job for the Buffalo Creek permittee. Additionally, construction is estimated to cost BLM $25,000 with an additional $2,000 annual maintenance for four miles of fence and two cattleguards.

Alternative C

There would be no economic impacts.

SOUTH DAKOTA RMP AREA

Alternative A

There would be no economic impacts.

Alternative B

Closing the Fossil Cycad Area to livestock grazing would eliminate all 97 animal unit months on the Murdock allotment, affecting one permittee. This level of reduction represents about 16 percent of the current permittee's operation. The permittee may adjust his operation by moving his livestock off his private range earlier, reducing his herd size or obtain an alternative source of forage. The regional economic impact including direct, indirect, and induced effects, would be an estimated loss of personal income of $2,700 annually and less than job. Additionally, fence construction is estimated to cost BLM $7,500 with an additional $200 annual maintenance for five miles of fence. Grazing fee receipts would decline $130. This would reduce range improvement funds by $65 and revenue to the county by $65.

Alternative C

There would be no economic impacts.

LOCATABLE MINERALS

BILLINGS RMP AREA

Alternative A

Only three of the areas proposed for ACEC designation are of interest for locatable minerals, all in Carbon County: Meeteetse Spires, Weatherman Draw, and the East Pryor Mountains. The primary minerals of interest are uranium (East Pryor Mountains), limestone (Meeteetse Spires) and bentonite (Weatherman Draw). Over the next 20 years only minor exploration activity is expected to occur, none of which is expected to result in discoveries of minable deposits. Exploration activity could cause short-term and minor increases in economic activity (see also Appendix 2 for the Reasonably Foreseeable Development Scenario for the East Pryor Mountains).

Alternative B

Withdrawing Meeteetse Spires, East Pryor Mountains and Weatherman Draw from locatable mineral entry would cause only minor decreases in potential short-term economic activity over the next 20 years to Carbon County. The loss of three exploration projects would mean short-term increases in employment and spending would not occur (see also Appendix 2 for the Reasonably Foreseeable Development Scenario for the East Pryor Mountains).

Although no development is expected in the next 20 years, withdrawing these areas would preclude all future development or exploration that might indicate the presence of minable deposits.

Alternative C

Impacts would be the same as Alternative B, except some mineral material activity may be possible in the Bridger Fossil area.

POWDER RIVER RMP AREA

Alternative A

There would be no economic impacts from locatable mining activity.

Alternative B

Impacts would be the same as Alternative A.

Alternative C

Impacts would be the same as Alternative A.

SOUTH DAKOTA RMP AREA

Alternative A

The primary minerals of interest are uranium and vanadium. Currently, there are no mining claims in the area. Over the next 20 years only minor exploration activity is expected to occur, none of which is expected to result in discoveries of minable deposits. Exploration activity could cause short-term and minor increases in economic activity (see also Appendix 2 for the Reasonably Foreseeable Development Scenario for the Fossil Cycad Area).

Alternative B

Withdrawing locatable minerals from entry in the Fossil Cycad would cause minor decreases in potential short-term economic activity over the next 20 years. The loss of potential exploration projects would mean short-term increases in employment and spending would not occur (see also Appendix 2 for the Reasonably Foreseeable Development Scenario for the Fossil Cycad Area). Although no development is expected in the next 20 years, withdrawing these areas would preclude all future development or exploration that might indicate the presence of minable deposits.

Alternative C

Impacts would be the same as Alternative B.

MINERAL MATERIAL SALES

BILLINGS RMP AREA

Most sales currently are for moss rock in noncommercial quantities (individual use). A typical sale would be about 3 - 5 tons at $7.50/ton, producing a total revenue to the federal government of $22.50 to 37.50 per sale (mineral material is sold at its appraised value which is currently $7.50/ton, but the appraisal value can change over time).

Alternative A

It is assumed for analysis purposes there would be four sales in five years and 19 sales in 20 years, or about one sale per year. Revenue to the federal government would be about $450 to $750 over the 20-year period. Otherwise, there would be no measurable economic impact from this level of activity.

Alternative B

Closing all of the proposed ACECs that are not already closed to mineral material sales (Bridger Fossil Area, Meeteetse Spires, Stark Site, Weatherman Draw) would preclude about one noncommercial sale per year across all ACECs. However, it is possible these sales would be conducted at other locations outside the ACECs; therefore, there would likely be no loss of opportunity for collecting mineral materials from other locations within the region, although other locations may be less convenient. There would otherwise be no impact.

Alternative C

The impacts would be the same as Alternative B, except some activity may be possible in the Bridger Fossil area.

POWDER RIVER RMP AREA

Mineral materials are used for road construction, soil conditioning, runways, railroad tracks, and a variety of other purposes. Across the area, the demand for mineral materials has been low. Over the past 10 years, there have been four sales resource-area wide, two of which were associated with nearby coal mines. In addition, there are currently about a dozen free-use permits. A typical sale is usually for a small amount of gravel or scoria, say 40 yards, at a permit price of $20 each. This level of demand is expected to continue for the foreseeable future, although it is also possible that a larger operation could occur at some point in the future if there is a major road construction project or perhaps a coal mining project in the area. A larger operation might be on the order of 100,000 cubic yards or more, and could generate about $50,000 in revenue to the federal government.

Alternative A

It is assumed for analysis purposes that one mineral material sale for sand, gravel, or scoria would occur in each of the Battle Butte, Finger Buttes, and Reynolds Battlefield areas, for a total of three sales over 20 years. Revenue to the federal government would be about $102,000. This assumes two of the sales would be larger operations of about 100,000 cu. yds. each for sand and gravel (Battle Butte and Finger Butte) and one smaller scoria sale of 4,000 cu. yds (Reynolds Battlefield). Otherwise, there would be no measurable economic impact from this level of activity.

Alternative B

Under Alternative B, it is assumed for analysis purposes that no mineral material sales over 20 years could occur in the ACECs. This represents a decrease of three sales over the long term in the ACEC areas. Although there would be no sales allowed in the ACEC areas, this is not expected to affect the ability to supply mineral materials to the region, given the level of present and past demand for mineral materials. However, obtaining mineral materials at other sites outside the ACECs may pose an added inconvenience, such as greater hauling distance, depending on the proximity of the mineral material to its ultimate use location.

Alternative C

The impacts would be the same as Alternative B.

OIL AND GAS

The economic impacts to oil and gas are based on the economic analysis in the Final Miles City District Oil and Gas EIS and RMP Amendment (BLM, 1992). The EIS included the Billings Resource Area, Powder River Resource Area, and the South Dakota Resource Area. A reasonably foreseeable development scenario (RFD) for the EIS estimated that 633 wells overall would be drilled over the foreseeable future under the least restrictive drilling conditions. The number of wells assumed for analysis purposes to be drilled in each of the proposed ACEC sites is consistent with the level of drilling activity envisioned in the original RFD and is not considered to be in addition to anticipated drilling in the RFD.

The economic analysis in the EIS portrays impacts for each RMP area in terms of the number of wells foregone under each of the management alternatives, using the 633 total wells drilled as the baseline (for example, if only 630 wells would be drilled under an alternative of a possible 633 wells, three wells would be foregone). That analysis is carried forward to this environmental assessment.

Table 5 shows the cumulative impact of one foregone well in each RMP area as described in the EIS (all dollar figures have been adjusted for inflation to 1997). It is important to note that the impacts assume that all potentially affected acres are currently leased. This will tend to portray impacts as a worst-case scenario. (Employment impacts are anticipated to be very low. The EIS estimated, for example, that a loss of three wells across the three RMP areas would reduce total employment by two jobs on an average annual basis.) These figures represent a profile of oil and gas wells drilled (exploratory and development wells) in the area prior to the development of the RFD in the EIS. (Due to the speculative nature of oil and gas exploration, these estimates may or may not be representative of future drilling activity in the three RMP areas.) Refer to the Final Miles City District Oil and Gas EIS and RMP Amendment for more detailed analysis of general economic impacts.

BILLINGS RMP AREA

Alternative A

It is estimated that six wells could be foregone (five oil and gas wells and one coal methane well) due to "no leasing" restrictions in Meeteetse Spires in Carbon County. (Note: there are no current leases at this site). "No leasing" restrictions would require wells in the area to be drilled directionally offsite, which is more costly and would consequently reduce the likelihood that a well may be drilled, although drilling is still possible. Cumulative regional economic impacts of six potentially foregone wells is as follows (for analysis purposes, "rent foregone" assumes all "no lease" mineral acreage within the study areas, 34,183 acres, would have been leased over the 20-year period).

Rent Foregone	$	1,196,405
Bbls Foregone		2,370
Royalty Foregone		6,000
MCF Foregone		106,908
Royalty Foregone		30,000
Earnings Foregone		246,000

Alternative B

It is estimated that 16 wells could be foregone (15 oil and gas wells and one coal methane well) due to closure of the proposed ACEC sites to leasing. (Note: current leases could still be drilled depending on existing lease terms). Most of this foregone activity would be in Carbon County (Bridger Fossil - one well foregone, Meeteetse - six wells foregone, Petroglyph Canyon - one well foregone, Weatherman Draw - seven wells foregone), with the exception of one well foregone in Musselshell County at the Stark site. Currently, only Weatherman Draw (Carbon County) and the Stark Site (Musselshell County) have leases within their boundaries. The level of foregone activity would be minor in relation to total regional economic activity across the RMP area and in Carbon and Musselshell Counties. Cumulative regional economic impacts of 16 potentially foregone wells is as follows (note that for analysis purposes, "rent foregone" assumes all "no lease" mineral acreage within the study areas, 34,783 acres, would have been leased over the 20-year period).

TABLE 5
IMPACTS FROM ONE FOREGONE OIL AND GAS WELL IN EACH RMP AREA

	BILLINGS	POWDER RIVER	SOUTH DAKOTA
Rent Foregone*	$ 1,217,405	$ 69,160	$ 11,200
Bbls Foregone	395	37,931	51,083
Royalty Foregone	1,000	101,000	136,000
MCF Foregone	17,818	0	1,000
Royalty Foregone	5,000	0	1,000
Earnings Foregone	41,000	242,000	346,000

*Figures for "Rent Foregone" represent **maximum possible foregone rent over a 20-year period.** Figures assume all public mineral acreage in the study areas for each RMP area, regardless of leasing restrictions, would be leased over a 20-year period (Billings RA=1,976 mineral acres; Powder River RA=25,097 mineral acres; South Dakota RA=320 mineral acres). See text under each alternative for specific estimates of foregone rent.

SOURCE: USDI, BLM, 1992.

NOTE: $ figures are adjusted to 1997 and rounded to the nearest thousand.

Rent Foregone	$	1,217,405
Bbls Foregone		6,320
Royalty Foregone		16,000
MCF Foregone		285,088
Royalty Foregone		80,000
Earnings Foregone		656,000

Alternative C

It is estimated that a total of 15 wells could be foregone (14 oil and gas wells and one coal methane well) due to restrictions placed on leasing in the proposed ACEC sites to leasing. (Note: current leases could still be drilled depending on existing lease terms). All of this activity foregone activity would be in Carbon County (Bridger Fossil - one well foregone; Meeteetse - six wells foregone, Petroglyph Canyon - one well foregone, Weatherman Draw - seven wells foregone). Currently, only Weatherman Draw (Carbon County) and the Stark Site (Musselshell County) have leases within their boundaries. The level of foregone activity would be minor in relation to total regional economic activity across the RMP area and in Carbon and Musselshell Counties. Cumulative impacts of 15 potentially foregone wells are as follows (note that for analysis purposes, "rent foregone" assumes all "no lease" mineral acreage within the study areas, 30,275 acres, would have been leased over the 20-year period).

Rent Foregone	$	1,059,625
Bbls Foregone		5,925
Royalty Foregone		15,000
MCF Foregone		267,270
Royalty Foregone		75,000
Earnings Foregone		615,000

POWDER RIVER RMP AREA

Alternative A

It is estimated for analysis purposes that one oil and gas well would be foregone in the Finger Buttes area over the next 20 years (Carter County). There is no current lease in the area, but there is one small lease (60 acres) in Reynolds Battlefield. Two of the three areas considered to have oil and gas potential (Battle Butte, and Reynolds Battlefield), whether leased or unleased, are currently managed under No Surface Occupancy restrictions. This would require wells to be drilled directionally offsite, which is more costly and would consequently reduce the likelihood that a well may be drilled, although drilling is still possible.

This level of foregone drilling is consistent with the RFD scenario in the Final Miles City District Oil and Gas EIS and RMP Amendment. The level of foregone drilling (one well) would be minor in relation to the total regional economic activity across the RMP area and in Carter County. Regional impact of one potentially foregone well is as follows (for analysis purposes, "rent foregone" assumes all "no lease" mineral acreage within the study areas, 1,520 acres, would have been leased over the 20-year period).

Rent Foregone	$	53,200
Bbls Foregone		37,391
Royalty Foregone		101,000
MCF Foregone		0
Royalty Foregone		0
Earnings Foregone		242,000

Alternative B

The impacts would be the same as Alternative A, except that a total of 1,976 acres would be designated "no lease". Rent foregone would be an estimated $69,160.

Alternative C

Impacts would be the same as Alternative A.

SOUTH DAKOTA RMP AREA

Alternative A

It is estimated for analysis purposes that one oil and gas well could be foregone in the Fossil Cycad area over the next 20 years (Fall River County) due to closure of the area to oil and gas leasing. The regional economic impacts of one potentially foregone well are as follows (note that for analysis purposes,"rent foregone" assumes all "no lease" mineral acreage within the study area, 320 ares, would have been leased over the 20-year period).

Rent Foregone	$	11,200
Bbls Foregone		51,083
Royalty Foregone		136,000
MCF Foregone		3,635
Royalty Foregone		1,000
Earnings Foregone		346,000

Alternative B

The impacts would be the same as Alternative A.

Alternative C

The impacts would be the similar to Alternative A. Managing the site under a No Surface Occupancy stipulation would still allow drilling to occur, but require wells to be drilled directionally offsite. This would be more costly and reduce the likelihood that a well would be drilled.

APPENDIX 5
WILDLIFE

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Miles City District Office
111 Garryowen Road
Miles City, Montana 59301

IN REPLY TO:
6000

December 11, 1997

Mr. Kemper McMasters
U.S. Fish and Wildlife Service
Montana Field Office
100 North Park, Suite 320
Helena, Montana 59601

Dear Mr. McMasters:

We have completed an environmental assessment and a draft finding of no significant impact for potential areas of critical environmental concern (ACECs) within the Miles City and Dakotas Districts. This document will amend the Billings, Powder River, and South Dakota resource management plans. The BLM evaluated potential ACECs in the three resource areas. Alternative management strategies for the areas and impacts from implementing those alternative plans are analyzed in this document.

We would like to initiate informal consultation for effects to Threatened and Endangered Species from the ACEC designation and management strategies. If you concur with the "No Effect" determination and the list of possible effected T&E species, please respond with a concurrence letter.

The following is BLM's list of Threatened or Endangered species that may occur in or near the ACECs.

bald eagle -	Haliaeetus leucocephalus
peregrine falcon-	Falco peregrinus
black-footed ferret-	Mustela nigripes

The plan is arranged by chapter, then alphabetically by resource area and potential ACEC. Chapter one discusses the purpose and need for the project. Chapter two presents existing management for each area and alternative management. Chapter three provides information on each potential ACEC. Chapter four discusses the impacts from the alternative management plans presented in chapter two. Chapter five outlines public participation efforts and the plan's distribution list. The relevance and importance evaluations for each nominated ACEC are found in appendix 1. A Glossary and Bibliography follow the appendixes. In the Glossary, you will find definitions to words and phrases such as "off-road vehicle open area" and "right-of-way avoidance area". The maps are located at the end of the document.

You are also encouraged to comment on BLM's management recommendations for each proposed ACEC, alternatives, and impacts. A 60-day comment period will begin with the filing of the notice of availability of this document in the *Federal Register*. Please direct your comments to Tim Murphy, Miles City District Manager, at the address located at the top of this letter. Thank you for your participation in this planning effort. Please refer any questions to Jay Parks, at (406) 238-1549.

Sincerely,

Timothy M Murphy
District Manager

United States Department of the Interior

FISH AND WILDLIFE SERVICE
MONTANA FIELD OFFICE
100 N. PARK, SUITE 320
HELENA, MT 59601
PHONE (406) 449-5225, FAX (406) 449-5339
EMAIL [illegible]

DM ____ PAO ____
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PLAN ____
JRA ____
Other ____
DISTRICT OFFICE
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APR 1 3 1998

Action ____
Coord w/ ____
Sig. DM ____ Sig. ADM ____
Copies to ____

M.02 (I)

April 9, 1998

MEMORANDUM

To: District Manager, Bureau of Land Management, Miles City District Office, Lewistown, MT

From: Field Supervisor, Montana Field Office, Helena, MT

Subject: Informal consultation on ACEC designations to amend Resourse Management Plans

Thank you for your request for informal consultation for effects to threatened and endangered species from the ACEC designation and management strategies. The environmental assessment and draft finding of No Significant Impact for potential areas of critical environmental concern (ACEC's) within the Miles City and Dakotas Districts will amend the Billings, Powder River, and South Dakota resource management plans.

Your assessment covered the following threatened and endangered spedies:

Listed Species	Expected Occurrence
Bald eagle (Haliaeetus leucocephalus	Year-round resident, Nesting, Winter resident, Migrant
Peregrine falcon (Falco peregrinus)	Summer resident, Migrant
Black-footed ferret (Mustela nigripes)	Potential resident in prairie dog (Cynomys sp.) towns. Non-essential experimental population in Phillips and Blaine Counties

We concurr with the "No Effect" determination. Your efforts to meet our joint responsibilities under the Endangered Species Act of 1973 as amended, are appreciated.

In your discussion and consideration of candidate species, an old classification system was used. Please refer to the following updated list for future assessments.

January 1998

MONTANA ANIMAL AND PLANT CANDIDATES FOR LISTING

UNDER THE ENDANGERED SPECIES ACT

Candidate species are those taxa for which the U.S. Fish and Wildlife Service has sufficient information on biological status and threats to propose to list them as threatened or endangered. The Service encourages their consideration in environmental planning and partnerships; however, none of the substantive or procedural provisions of the Act apply to candidate species.

Compiled from the 1996 Plant and Animal Notice of Review (61 Federal Register 7596).

Common Name	**Scientific Name**	**Expected Occurrence (Montana)**
Swift fox	*Vulpes velox*	E of divide - prairie, grasslands
Canada lynx (contiguous U.S. population)	*Lynx canadensis*	W MT - montane forest
Mountain plover	*Charadrius montanus*	E MT - shortgrass prairie
Sturgeon chub	*Macrhybopsis gelida*	Lower Yellowstone, Powder, Big Horn, Milk, and Missouri Rivers
Sicklefin chub	*Macrhybopsis meeki*	Yellowstone, Lower Missouri Rivers
Arctic grayling (fluvial population)	*Thymallus arcticus*	SW MT - Big Hole River
Warm spring zaitzevian riffle beetle	*Zaitzevia thermae*	Gallatin Co. - warm springs

LRH\lrh

cc: Suboffice Coordinator, USFWS, Ecological Services (Billings, MT)

GLOSSARY

AIR QUALITY. Air quality is based on the pollutants emitted into the atmosphere and the dispersion potential of an area to dilute those pollutants. There are three classes of air quality.

Class I. Any area which is designated for the most stringent degree of protection from future degradation of air quality. The Clean Air Act designates as mandatory Class I areas each park over 6,000 acres and each national wilderness area over 5,000 acres.

Class II. Any area cleaner than federal air quality standards which is designated for a moderate degree of protection from future air quality degradation. Moderate increases in new pollution may be permitted in a Class II area.

Class III. Any area cleaner than federal air quality standards which is designated for a lesser degree of protection from future air quality degradation. Significant increases in new pollution may be permitted in a Class III area.

DISCRETIONARY CLOSURES. Areas where the BLM has determined that energy or mineral leasing, entry or disposal, even with the most restrictive stipulations or conditions, would not be in the public interest.

GEOPHYSICAL EXPLORATION FOR OIL AND GAS. Activity relating to the search for evidence of oil and gas which requires the physical presence upon the lands and which may result in damage to the lands or resources. It includes, but is not limited to, geophysical operations, construction of roads and trails, and cross-country travel of vehicles.

FIRE SUPPRESSION. The intensity level for the initial attack on fires are divided into two broad categories.

Intensive. The objective is to immediately suppress wildfires using available resources. The public lands designated for intensive fire suppression are areas with (1) large amounts of intermingled or adjacent private or state lands, and (2) high values-at-risk (items of human construction), high-value wildlife habitat, historic sites, or other resources. Wildfires in intensive fire suppression shall be suppressed immediately, and can include the use of dozers, motor graders, tractors with plows, air tankers, and firefighting crews.

Conditional. In conditional fire suppression areas, management actions may restrict intensive fire suppression techniques. The fire situation will be carefully analyzed before committing heavy equipment. BLM will use the most appropriate response based on cost, consideration of resource loss and benefits, firefighter and public safety, and threats to private property. Intensity level of conditional fire suppression is not predetermined and will vary with conditions (impending weather forecasts, condition of vegetation or firefighting forces committed to other fires).

NONDISCRETIONARY CLOSURES. Areas specifically closed to energy or mineral leasing, entry or disposal by law, regulation, Secretarial Decision or Executive Order.

OFF-ROAD VEHICLE. Any motorized vehicle capable of, or designated for, travel on or immediately over land, water, or other natural terrain, excluding: any nonamphibious registered motorboat; any military, fire, emergency, or law enforcement vehicle while being used for emergency purposes; any vehicle whose use is expressly authorized by the authorized officer, or otherwise officially approved; vehicles in official use; and combat or combat support vehicle when used in times of national defense emergencies. These vehicles are subject to a designated area and trail use (open, limited and closed).

Open Area. All types of vehicle use is permitted at all times, anywhere in the area subject to the operating regulations and vehicle standards set forth in 43 CFR 8341 and 8342.

Limited Area. An area restricted at certain times, in certain areas, or to certain vehicular use. Vehicle use off-road is allowed when approved by the authorized officer. For example, with prior approval, travelling off-road would be allowed to maintain existing authorized facilities or fences.

Closed Area. An area where off-road vehicle use is prohibited, including on the existing roads and trails. Use of off-road vehicles in closed areas may be allowed for certain reasons; however such use shall be made only with the approval of the authorized officer.

POTENTIAL NATURAL COMMUNITY. When 76 to 100 percent of the vegetation in a biotic community has completed all successional sequences without interference.

RIGHT-OF-WAY AVOIDANCE AREA. An area where future rights-of-way may be granted only when no feasible alternative route or designated right-of-way corridor is available.

SERAL STAGES.

Early Seral. The vegetation present makes up to 25 percent of the potential natural community.

Mid Seral. The vegetation present makes up 26 to 50 percent of the potential natural community.

Late Seral. The vegetation present makes up 51 to 75 percent of the potential natural community.

USER DAY. When an individual participates in a recreational activity for at least six hours in one day.

VEHICLE WAY. An unmaintained established vehicle route existing at the time of the approved wilderness inventory.

VISUAL RESOURCE MANAGEMENT CLASSES.

Class I. The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude limited management activity. It would also not preclude those activities specifically authorized by the Wilderness Act of 1964 and described in BLM Manual H-8550-1.

Class II. The objective is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color and texture found in the predominate natural features of the characteristic landscape.

Class III. The objective is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

Class IV. The objective is to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance and repeating the basic elements.

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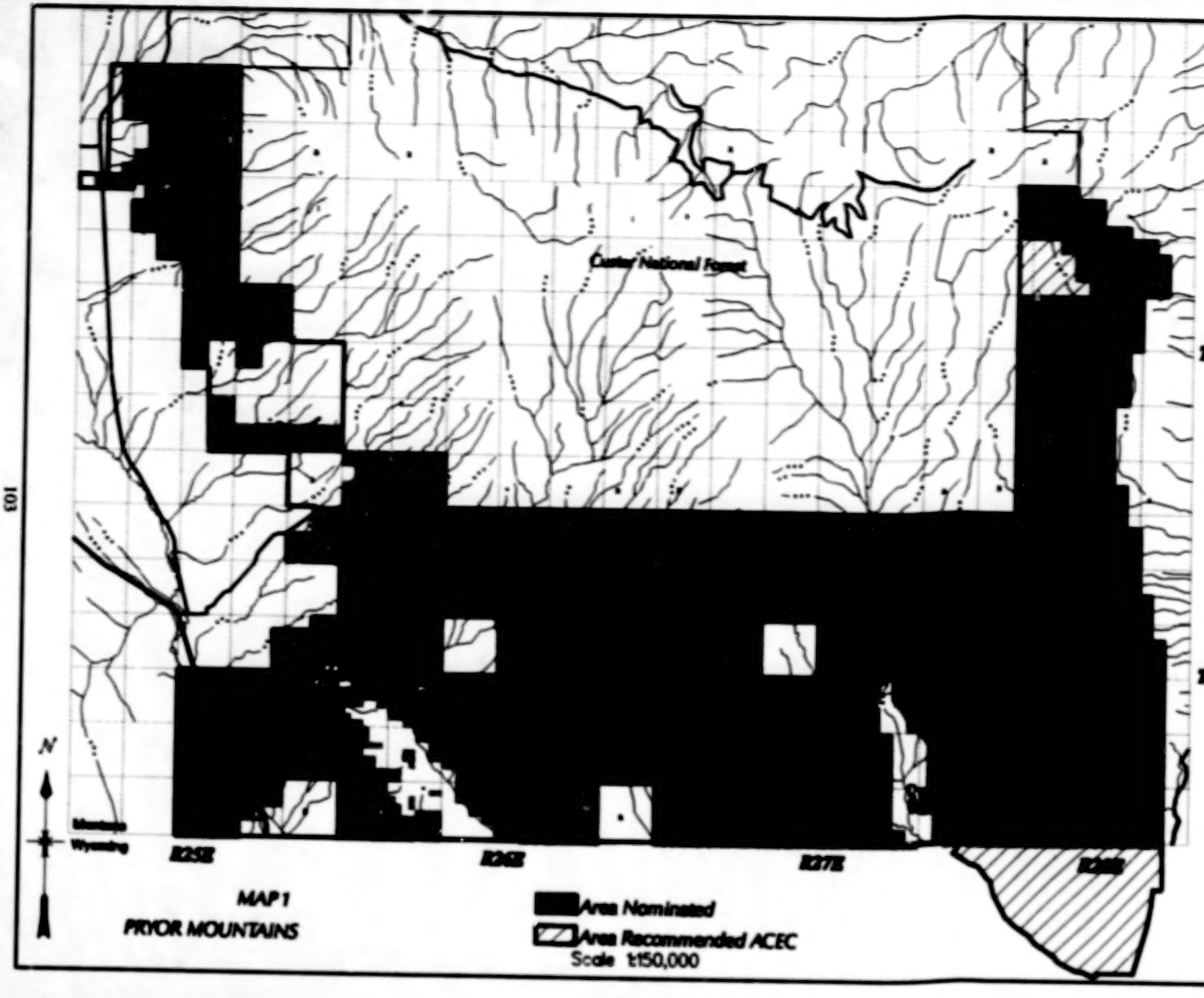
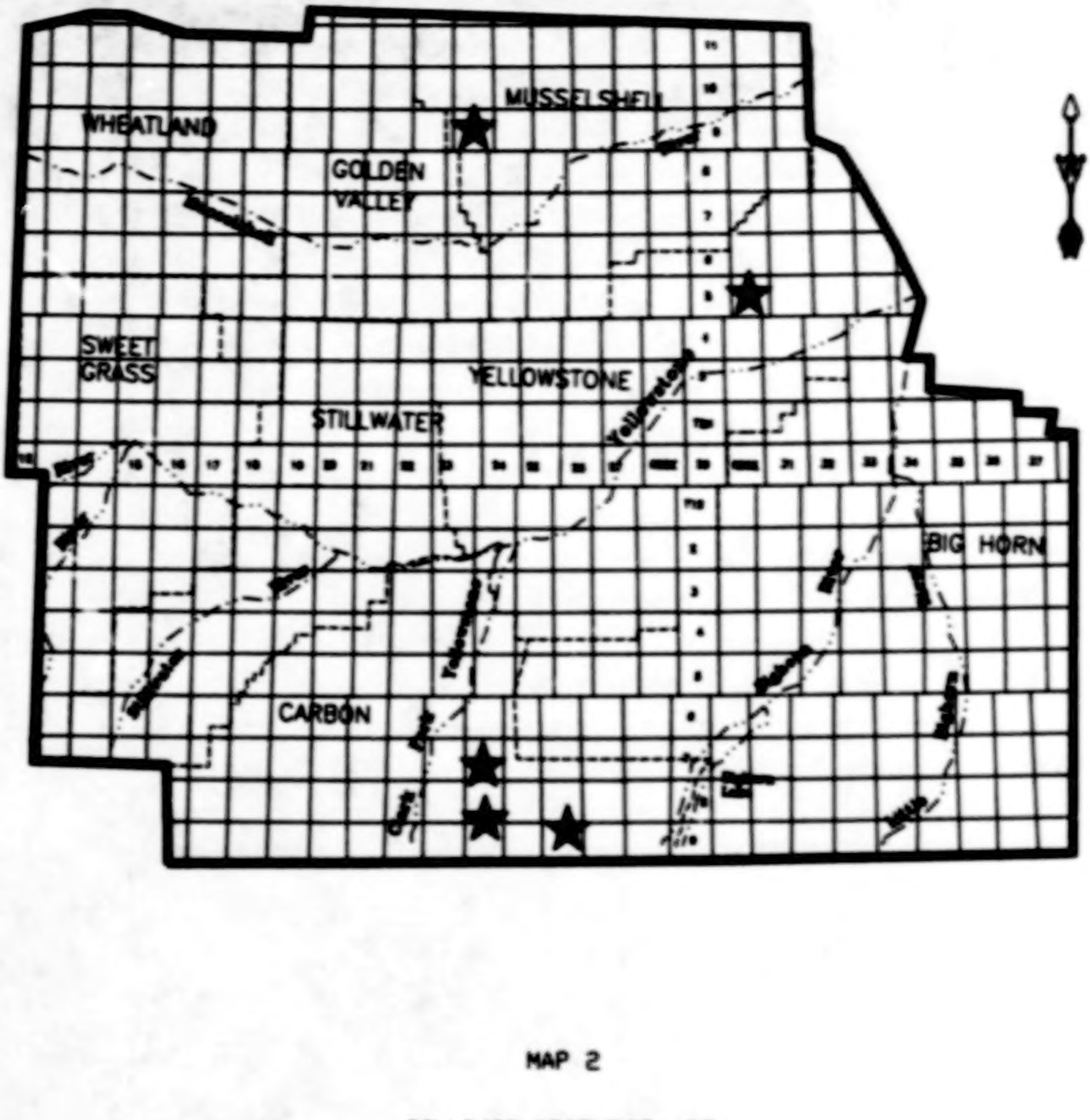


MAP 1
PRYOR MOUNTAINS



MAP 2

BILLINGS RESOURCE AREA

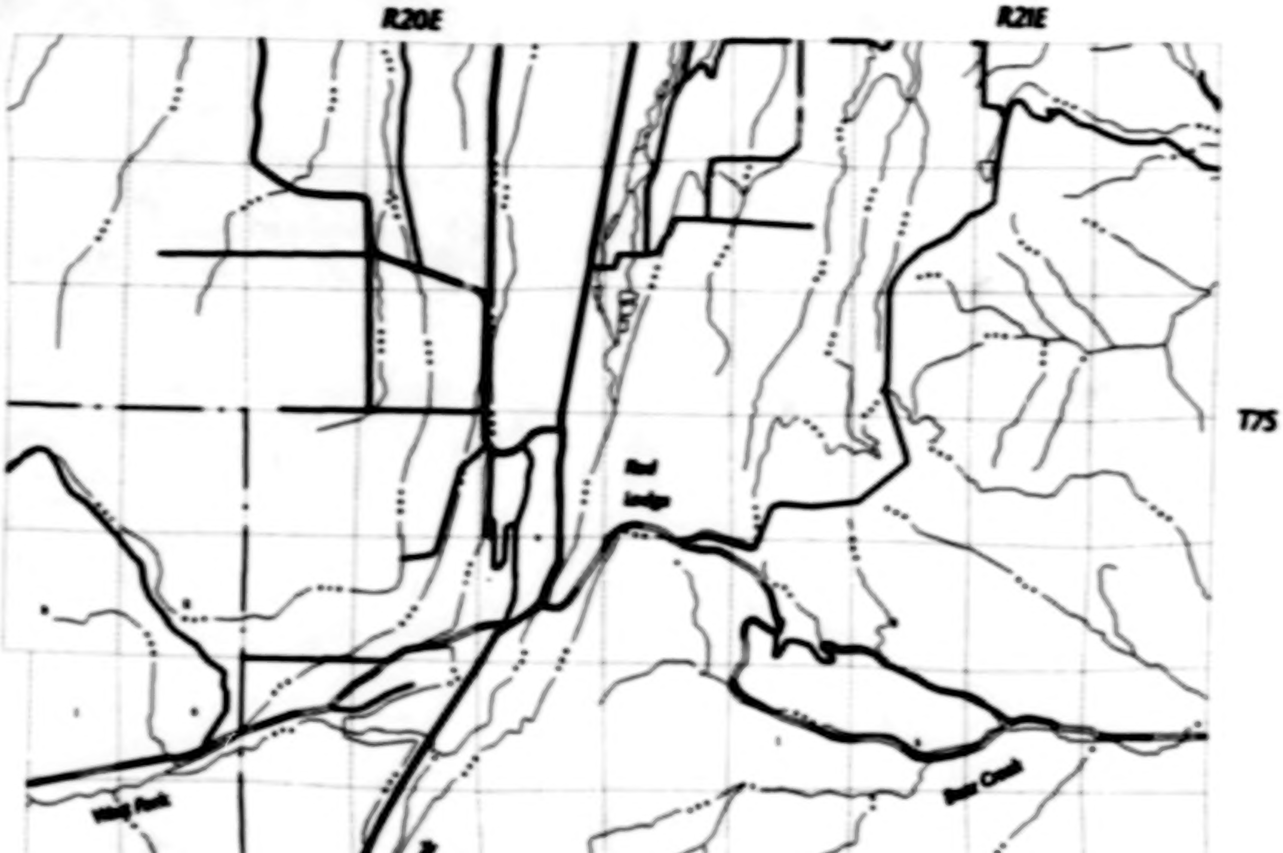
PALEONTOLOGY AND CULTURAL SITES

★ RECOMMENDED ACEC

----- COUNTY LINE

2 0 2 4 6

Scale in miles

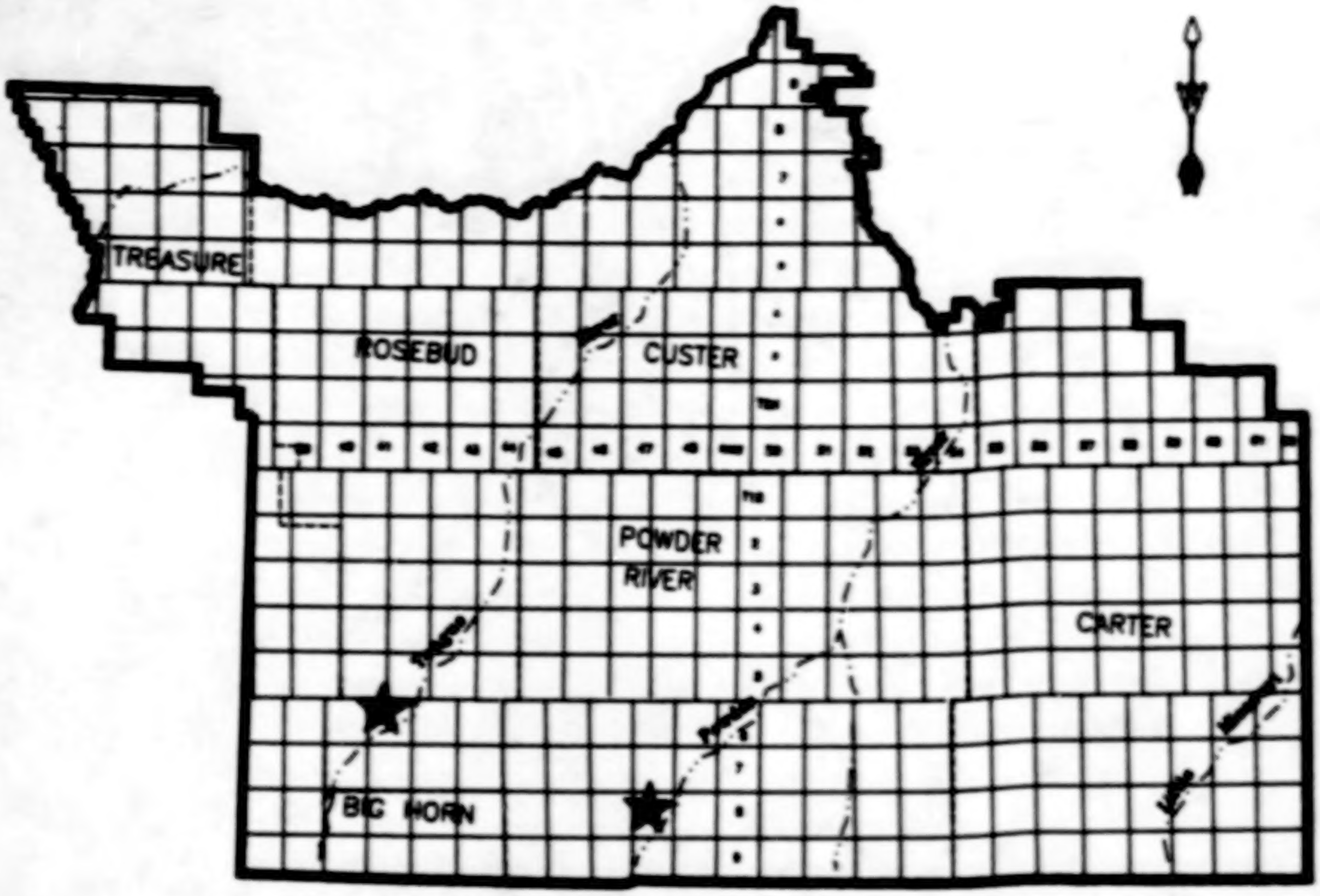


MAP 3

MEETEETSE SPIRES

■ **Recommended ACEC**

Scale 1:100,000



MAP 4

POWDER RIVER RESOURCE AREA

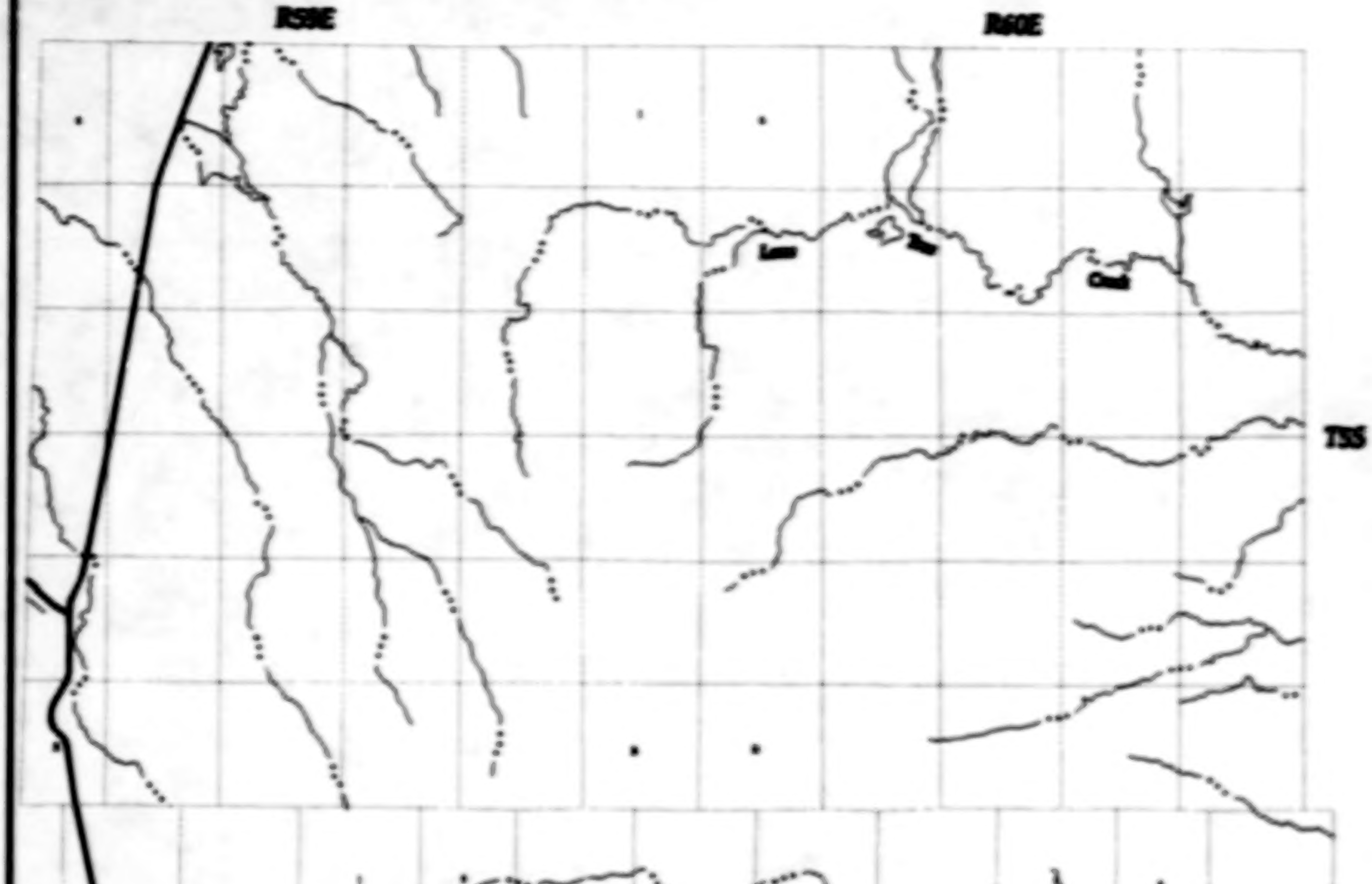
CULTURAL SITES

★ RECOMMENDED ACEC

----- COUNTY LINE

2 0 2 4 6

Scale in miles

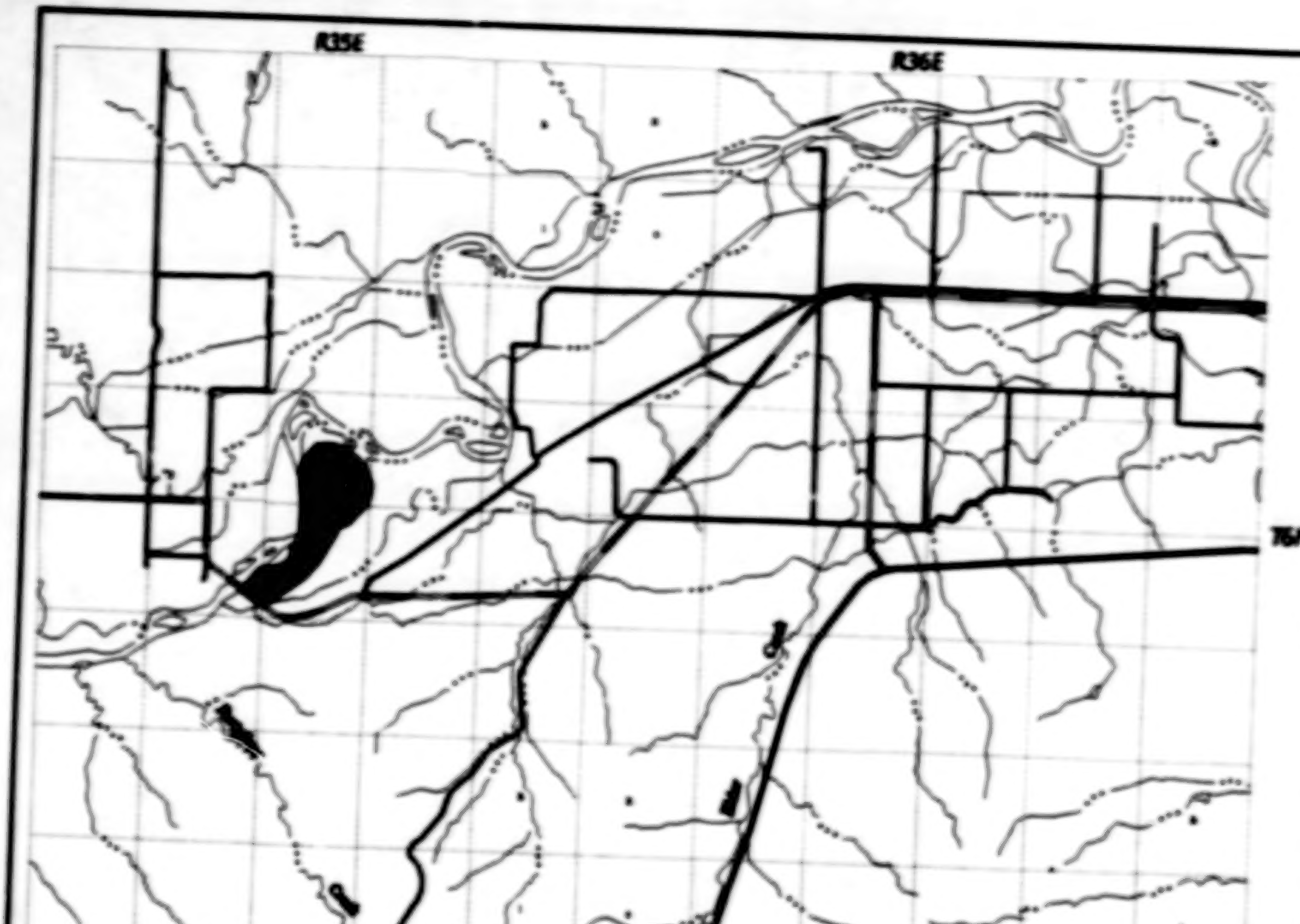


MAP 5
FINGER BUTTES

■ Recommended ACEC

NOTE: There is no legal access into this area.

Scale 1:100,000

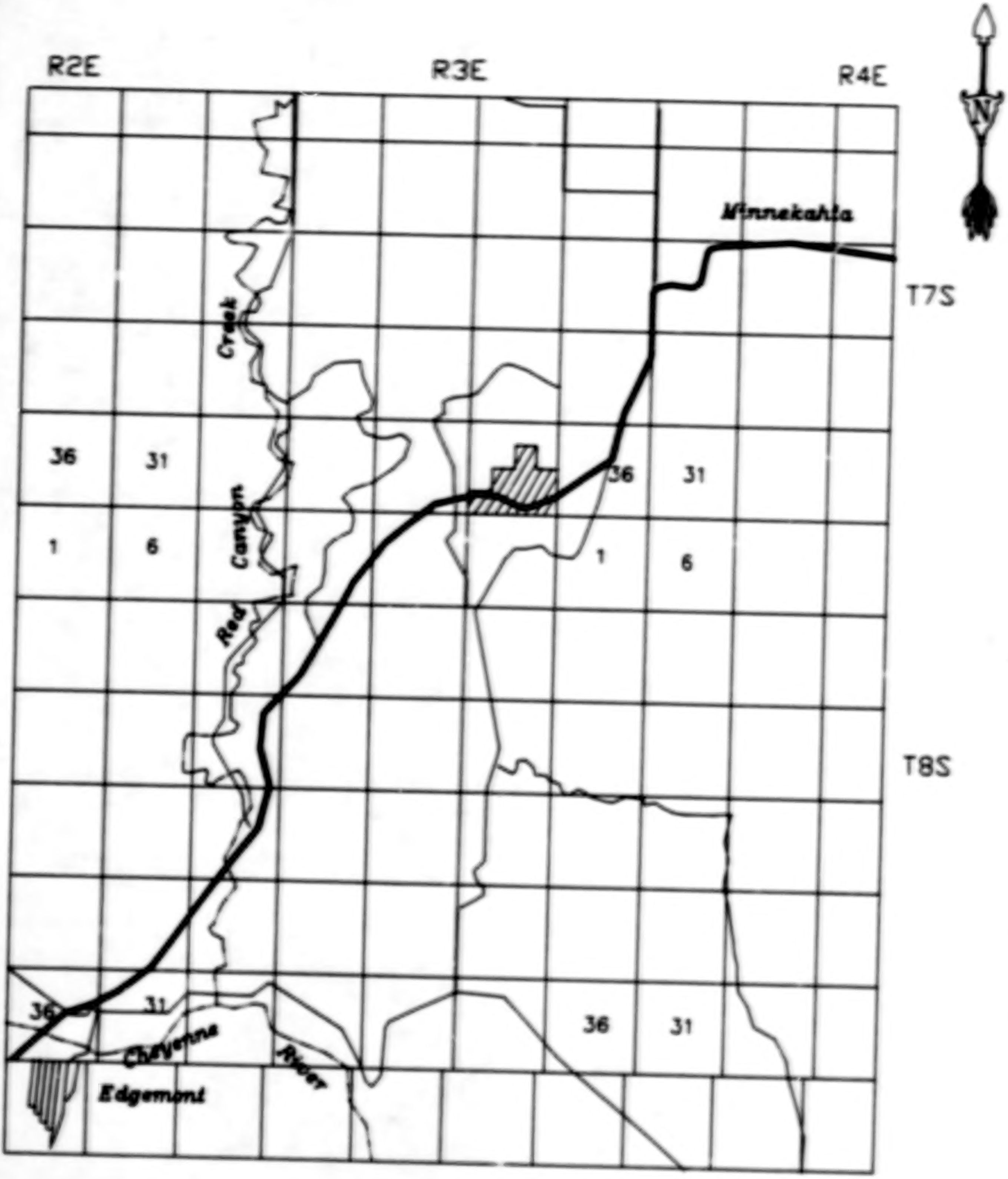


MAP 6

HOWREY ISLAND

■ *Recommended ACEC*

Scale 1:100,000

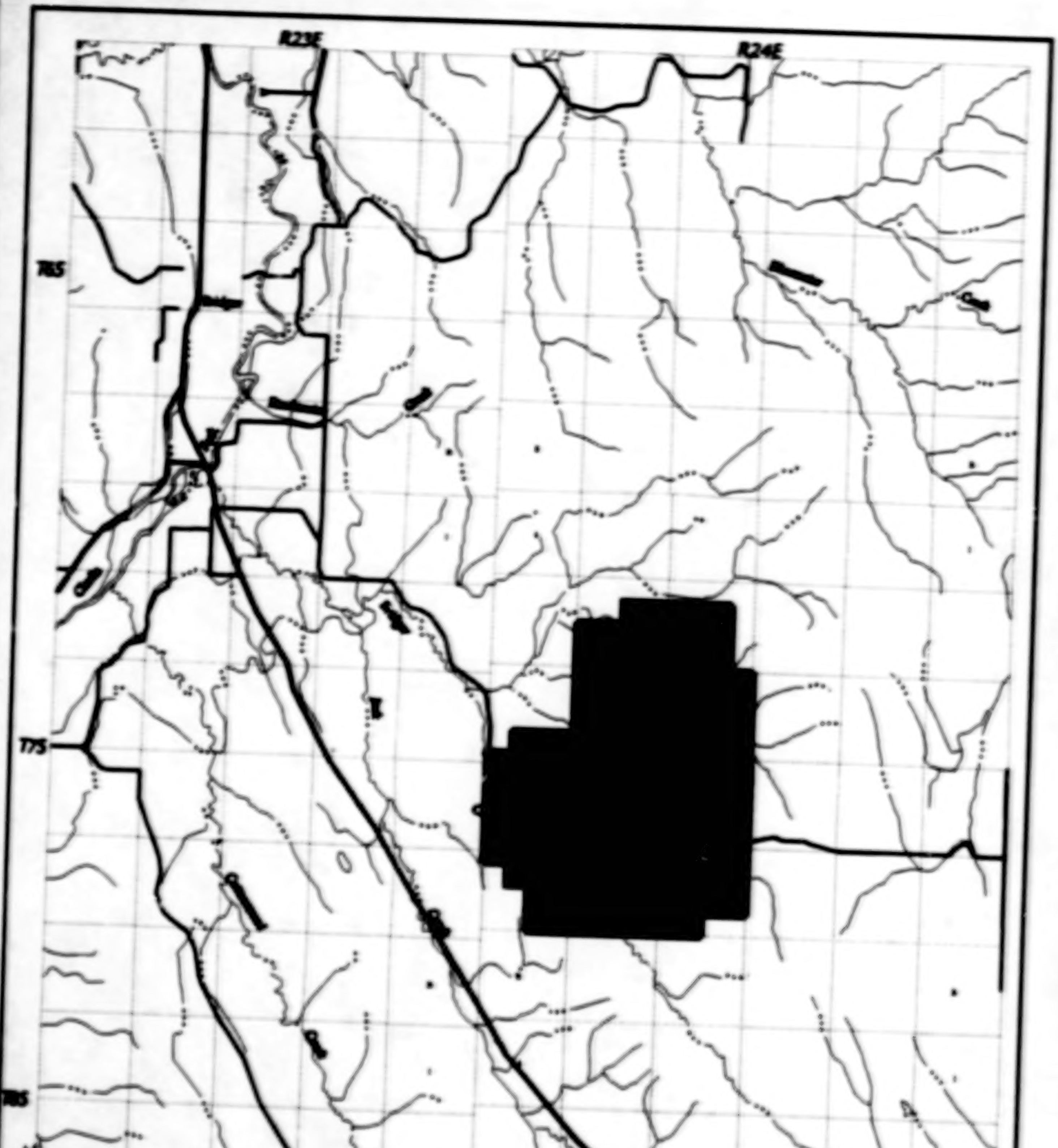


MAP 7

FOSSIL CYCAD AREA

▨ Recommended ACEC

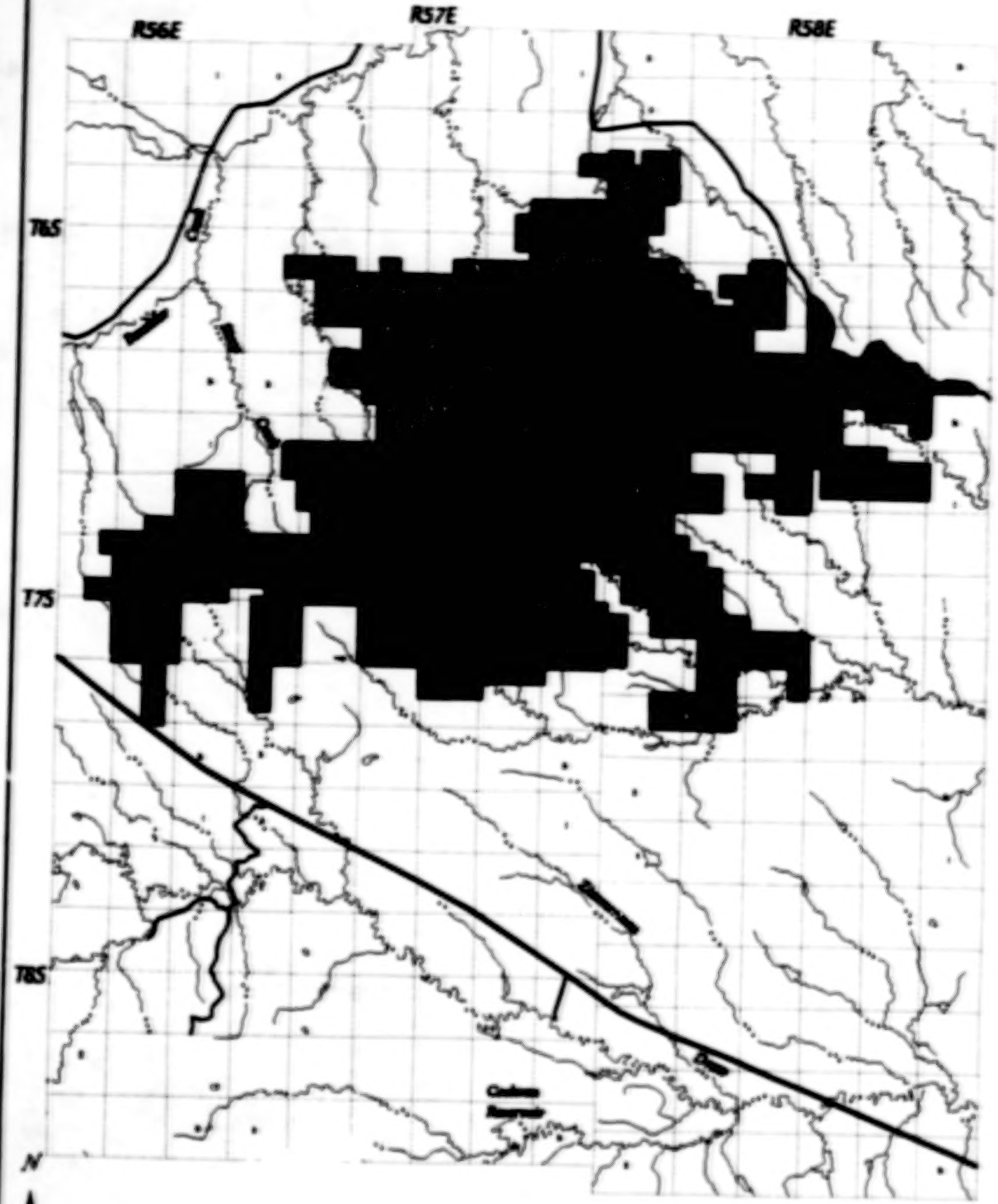
Scale 1:100,000



MAP 8
RED DOME

■ *Area Nominated*

Scale 1:100,000

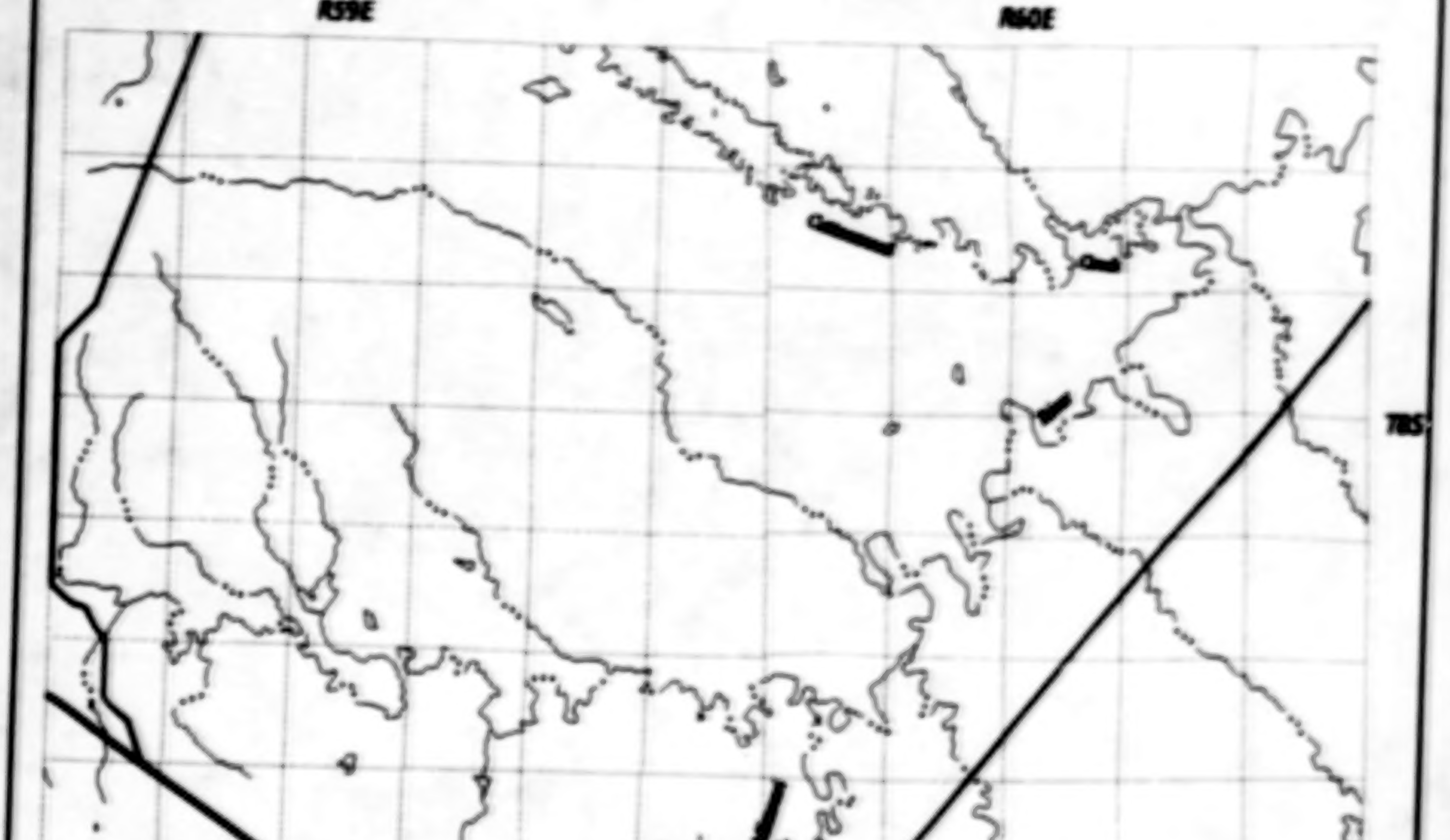


MAP 9

DEADHORSE BADLANDS

■ Area Nominated

Scale 1:150,000

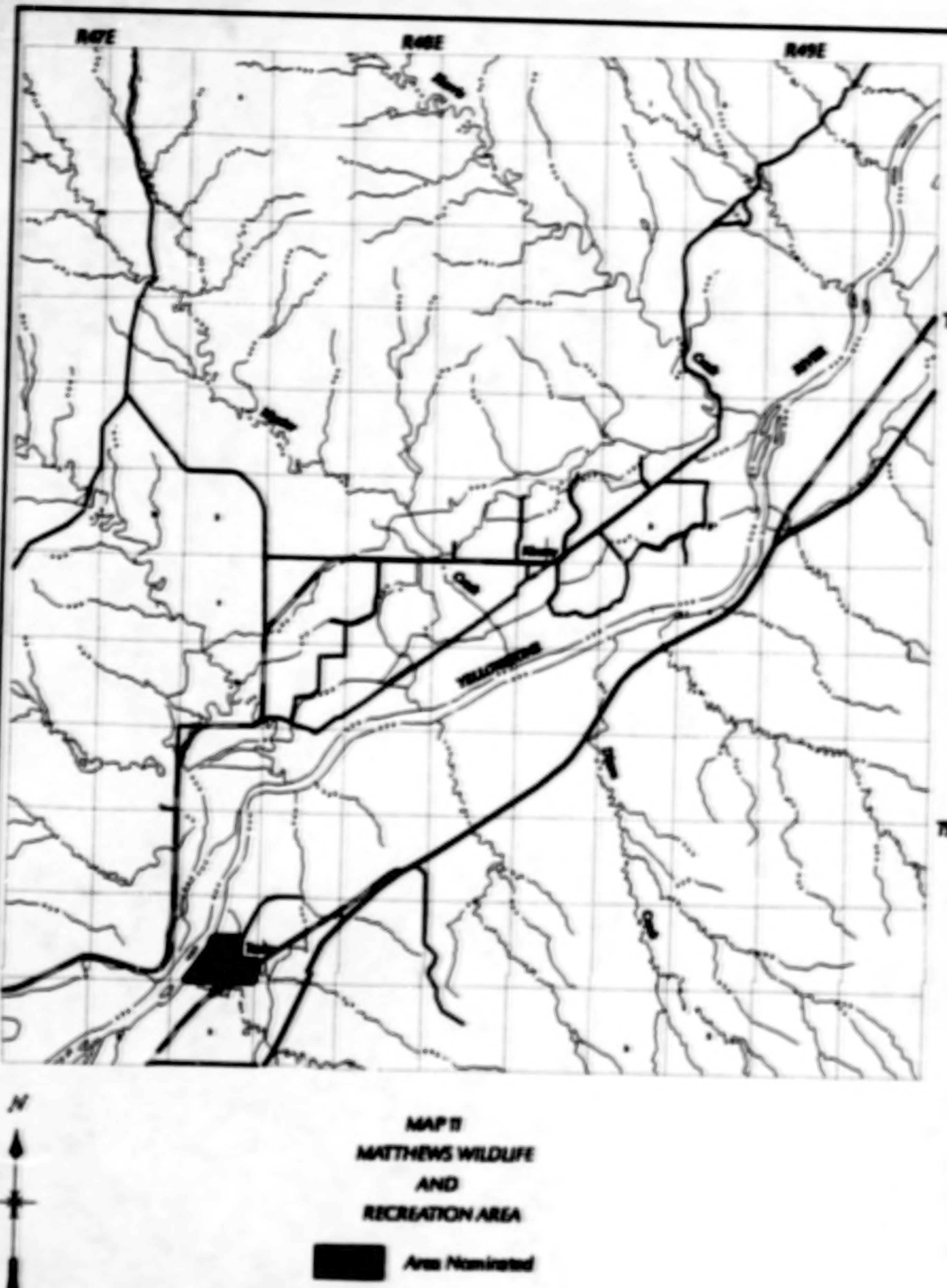


MAP 10

ALZADA OAKS

▨ Area Nominated

Scale 1:100,000



MAP 11
MATTHEWS WILDLIFE
AND
RECREATION AREA

■ Area Nominated

Scale 1:100,000

☆ U.S. GOVERNMENT PRINTING OFFICE: [illegible] / [illegible] Region No. 10

END

04-23-99